A NOVEL OF THE FUTURE COMPLETE IN THIS ISSUE!

STARTLING STORIES

15¢

MAR.

FEATURING

SOJARR OF TITAN

A Complete Book-Length Novel

By MANLY WADE WELLMAN

•

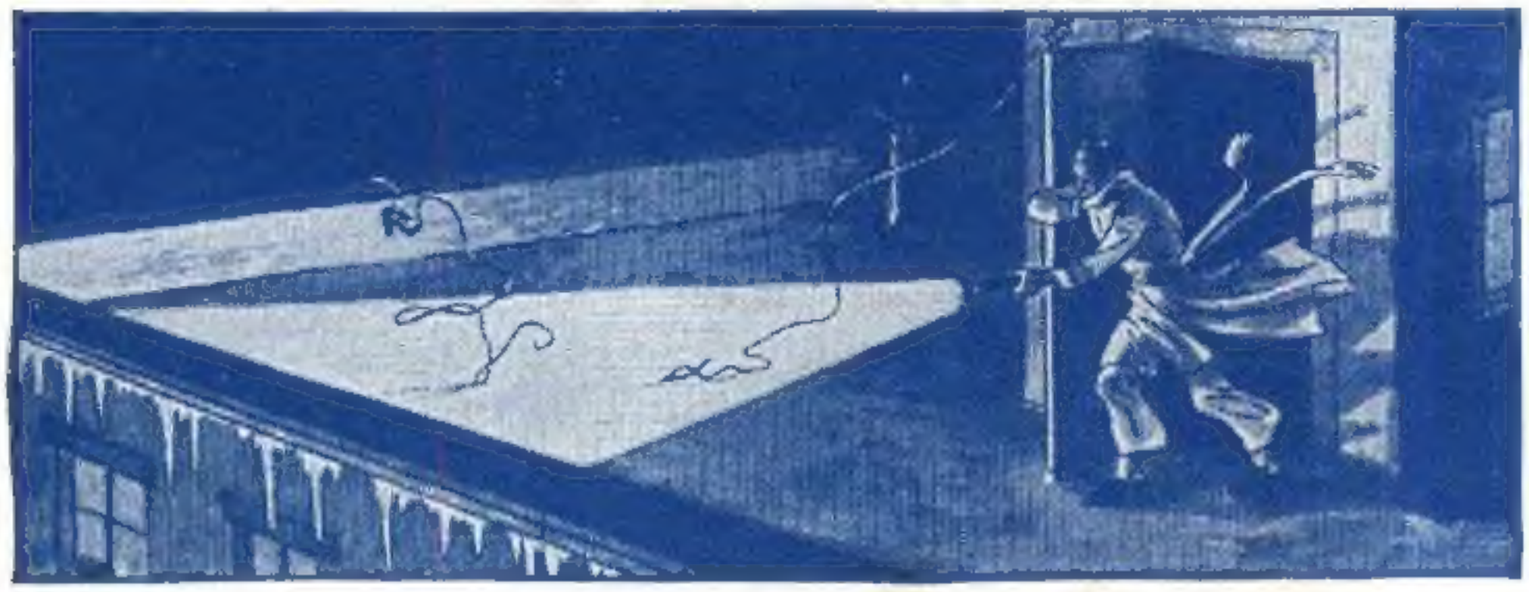
THE WORLDS OF IF

By STANLEY G. WEINBAUM

A THRILLING PUBLICATION

"I CHEATED DEATH ON A SKYSCRAPER ROOF!"

A true experience of ALLEN H. GIPSON, *New York City*



"ONE BITTERLY COLD NIGHT, my radio went dead," writes Mr. Gipson. "Suspecting that the howling wind had blown down the aerial, I threw on a dressing gown, grabbed my flashlight, and headed for the fifteenth floor roof.

"AN ICY WIND chilled me as I searched for and found the aerial. Making hasty repairs, I started back down. To my horror, I found myself locked out. I battered the door. I shouted. But the wind howled me down.

"NEARLY FROZEN TO DEATH, I had an inspiration. Ripping the aerial loose, I tied the lighted flashlight to it, and swung it over the side of the building. Luckily the light attracted someone in an apartment below. Thanks to those dependable 'Eveready' *fresh* DATED batteries I was saved.

(*Signed*) Allen H. Gipson"

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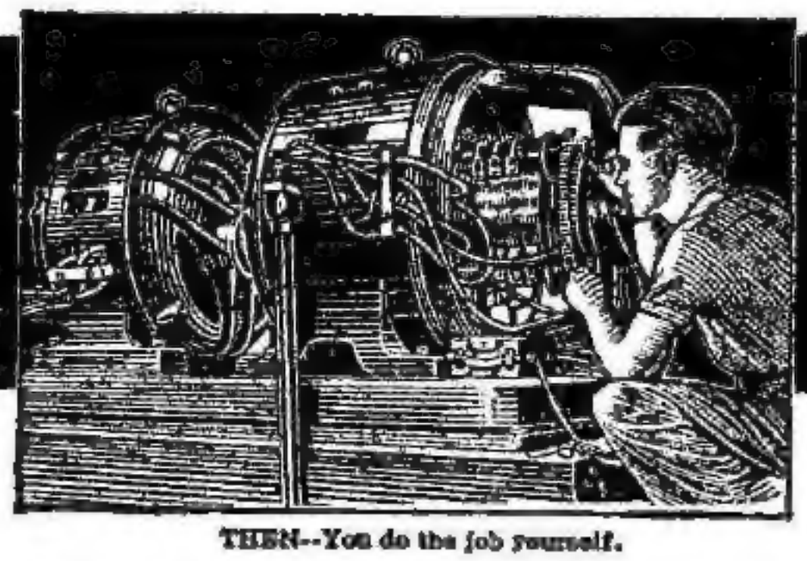

THEN--You do the job yourself.

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STARTLING STORIES

Vol. 5, No. 2 CONTENTS March, 1941

A Complete Book-Length Scientifiction Novel

SOJARR OF TITAN

By MANLY WADE WELLMAN

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BUT JIM. I DON'T SEE HOW WE CAN AFFORD TO MARRY ON YOUR LOW PAY
MARY'S RIGHT. I HAVE NO RIGHT TO ASK HER TO MARRY ME ON THE MONEY I'M MAKING
LOOK HERE. N.R.I. HAS TRAINED HUNDREDS OF MEN LIKE ME TO MAKE GOOD MONEY IN RADIO. I GUESS I'LL GET THAT FREE BOOK
LEARNING RADIO THIS WAY IS ACTUALLY FUN. I'M ALREADY MAKING $5 TO $10 A WEEK IN SPARE TIME. RADIO CERTAINLY OFFERS OPPORTUNITY TO WELL TRAINED TECHNICIANS
YOU CERTAINLY KNOW RADIO. MINE NEVER SOUNDED BETTER
THANKS. YOU SEE, I HAVE TAKEN N.R.I. TRAINING
OH JIM. IT'S WONDERFUL. NOW YOU'RE ON THE WAY TO SUCCESS
YES MARY, AND THERE'S A REAL FUTURE FOR US IN RADIO AND TELEVISION

I Trained These Men

Chief Operator Broadcasting Station

Before I completed your lessons, I obtained my Radio Broadcast Operator's license and immediately joined Station WMPC where I am now Chief Operator.
HOLLIS F. HAYES
327 Madison St.
Lapeer, Michigan

Service Manager for Four Stores

I was working in a garage when I enrolled with N. R. I. I am now Radio service manager for the M..... Furniture Co. for their four stores.
JAMES E. RYAN
119 Pebble Court
Fall River, Mass.

$10 to $20 a Week in Spare Time

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JOHN JERRY
1529 Arapahoe St., Room 17,
Denver, Colorado

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If you **ARE** called, and are then a Radio Technician, you'll be eligible for a communications branch of the service; in line for technical ratings with extra pay.
If you **ARE NOT** called, you now have an opportunity to get into Radio at a time when the Government is pouring millions of dollars into the Radio industry to buy Defense equipment, on top of boom civilian Radio business. Either way — it's smart to train for RADIO NOW!

I WILL TRAIN YOU AT HOME
in your spare time for a
GOOD JOB IN RADIO

If you can't see a future in your present job; feel you'll never make much more money, if you're in a seasonal field, subject to lay offs, IT'S TIME NOW to investigate Radio. Trained Radio Technicians make good money, and you don't have to give up your present job or leave home to learn Radio. I train you at home nights in your spare time.

Why Many Radio Technicians Make $30, $40, $50 a Week

Radio broadcasting stations employ operators, technicians. Radio manufacturers employ testers, inspectors, servicemen in good-pay jobs. Radio jobbers, dealers, employ installation and servicemen. Many Radio Technicians open their own Radio sales and repair businesses and make $30, $40, $50 a week. Others hold their regular jobs and make $5 to $10 a week fixing Radios in spare time. Automobile, Police, Aviation, Commercial Radio, Loudspeaker Systems, Electronic Devices are other fields offering opportunities for which N. R. I. gives the required knowledge of Radio. Television promises to open good jobs soon.

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AFTER

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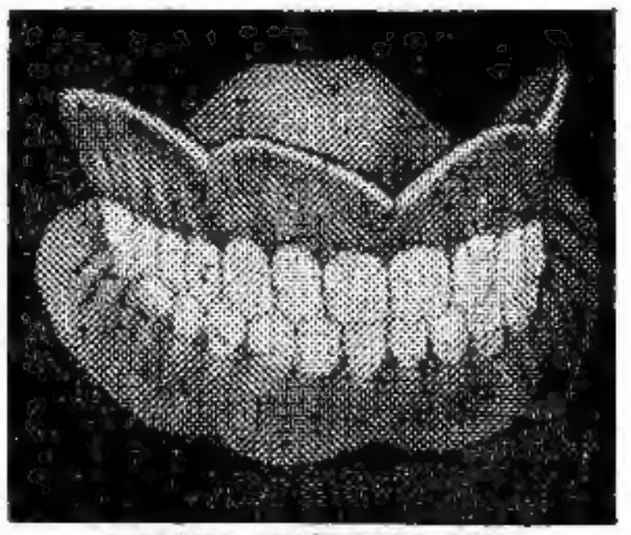
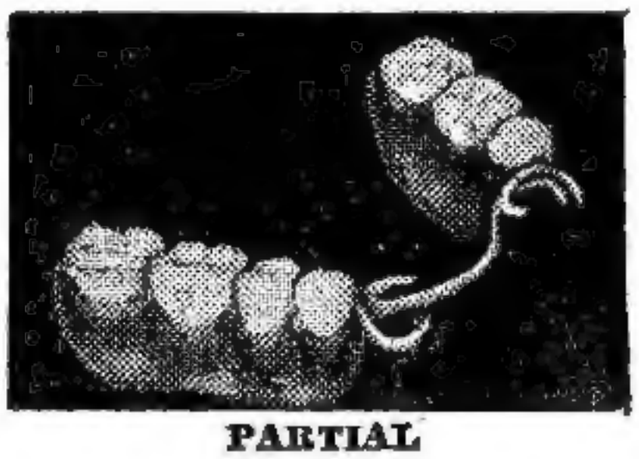


HAND-CARVED SET



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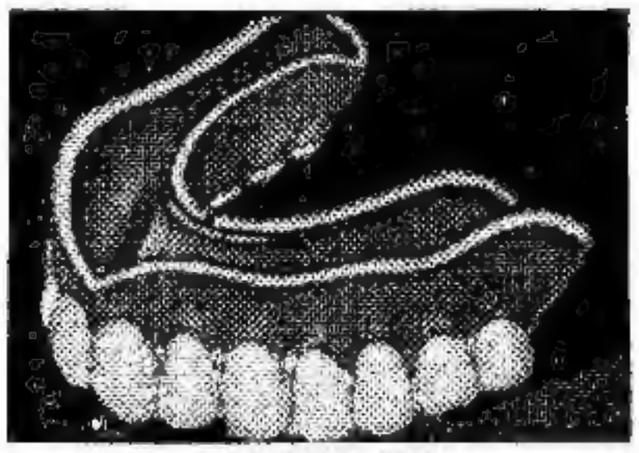

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CITY & STATE .....

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But read this unsolicited letter for yourself:

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"Now, when I play for people they will hardly believe that I learned to play so well with just a correspondence course in so short a time. I am getting to the point where even the hardest music holds no terrors for me."

(Signed) *H. C. S., *Calif.*

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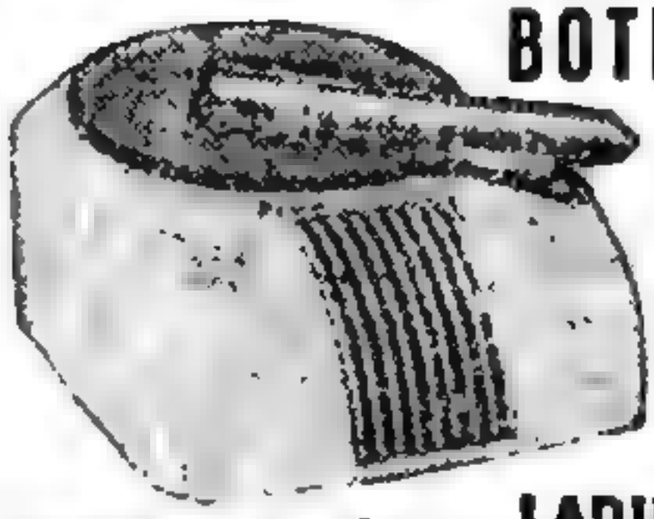

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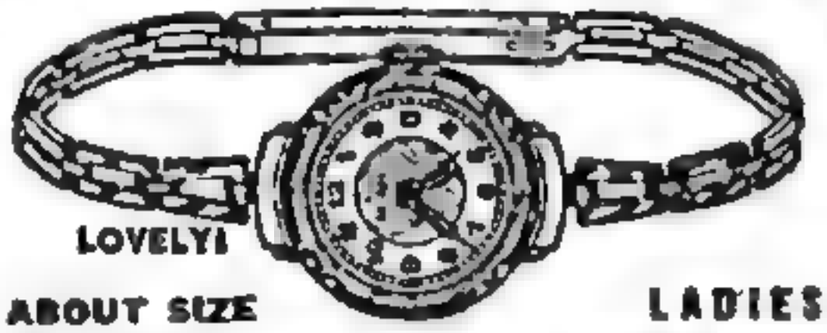

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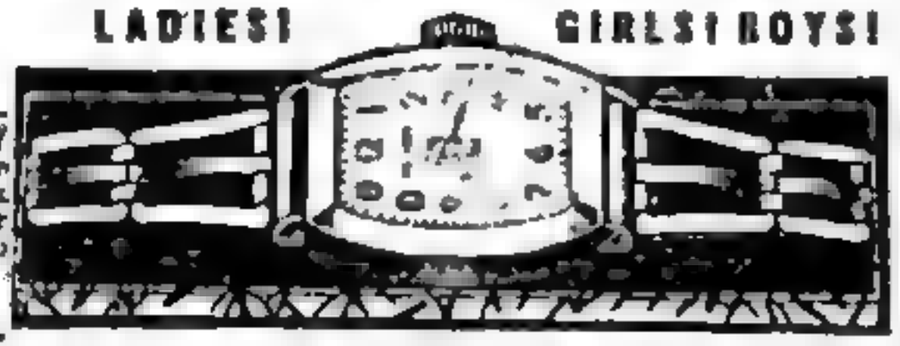

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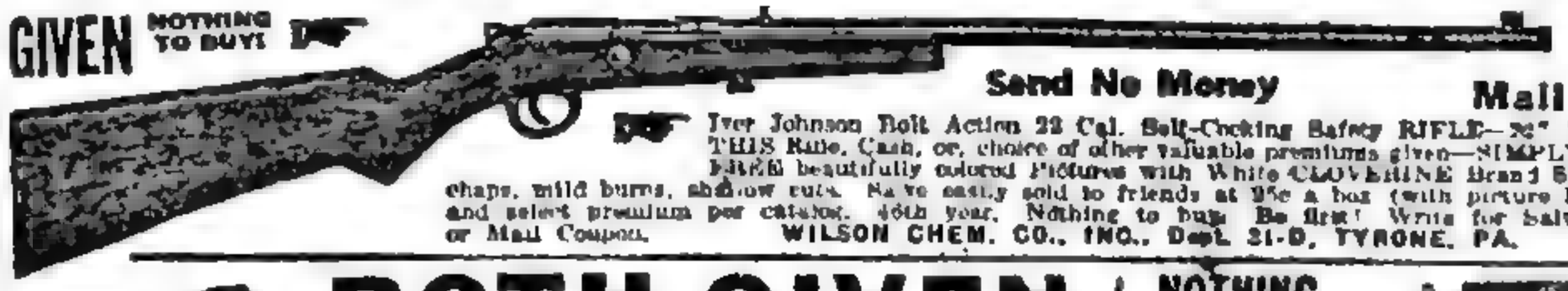

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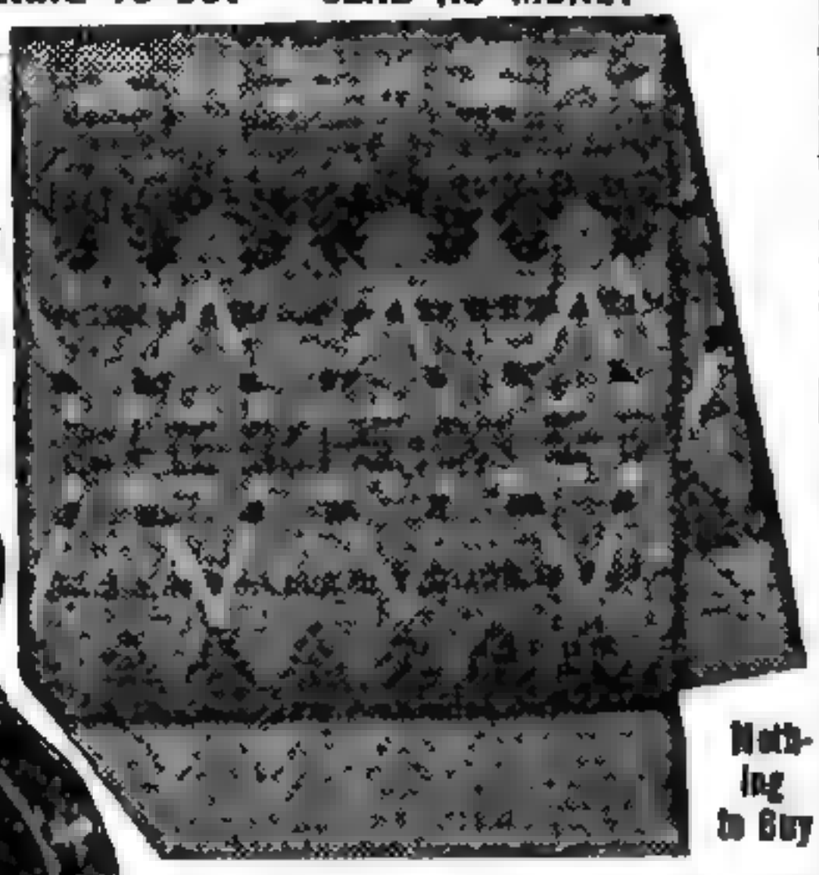

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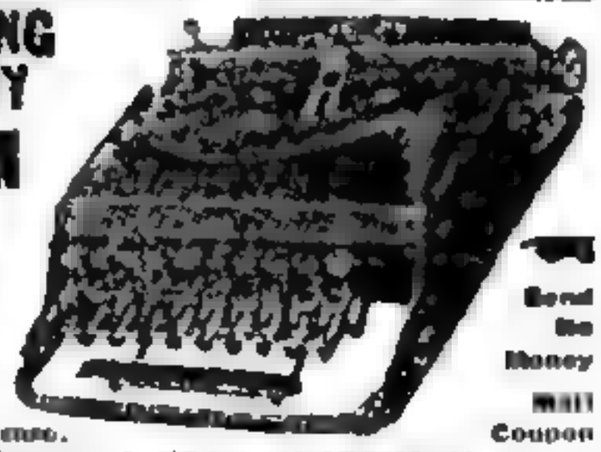

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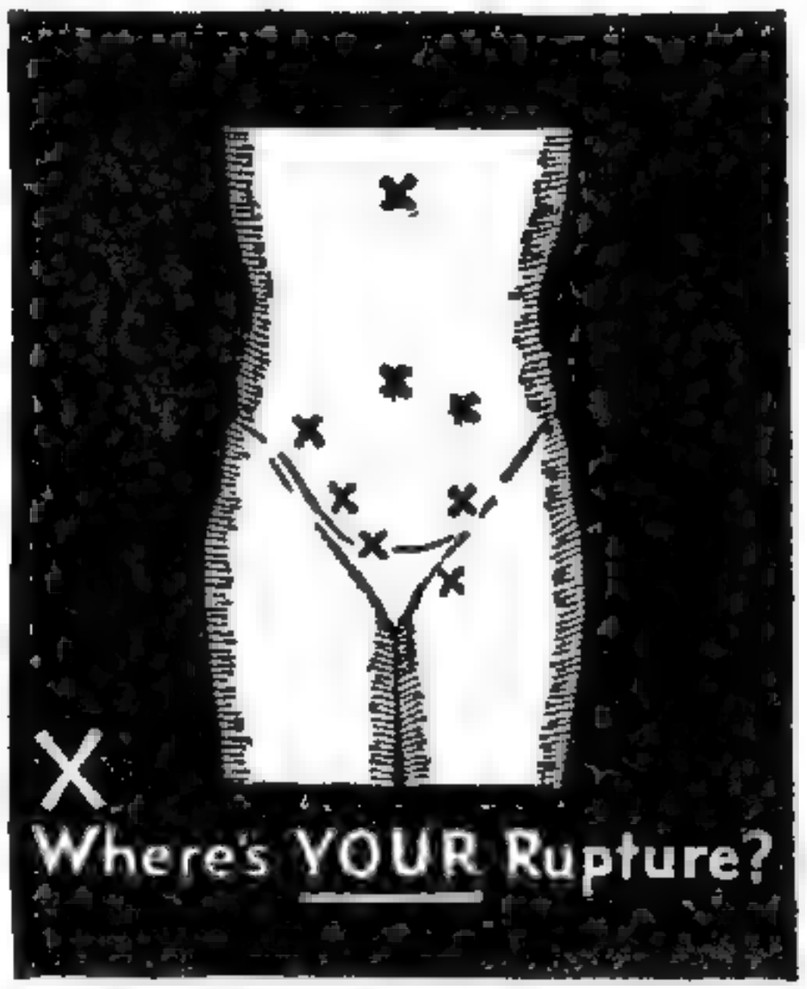
don't Worry about Rupture



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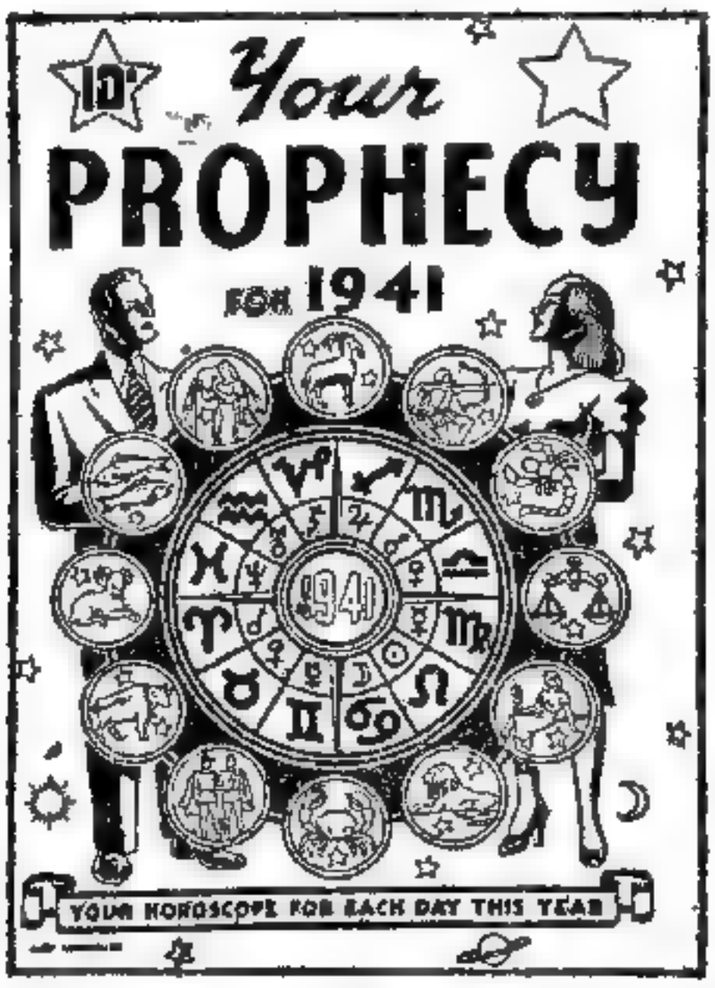

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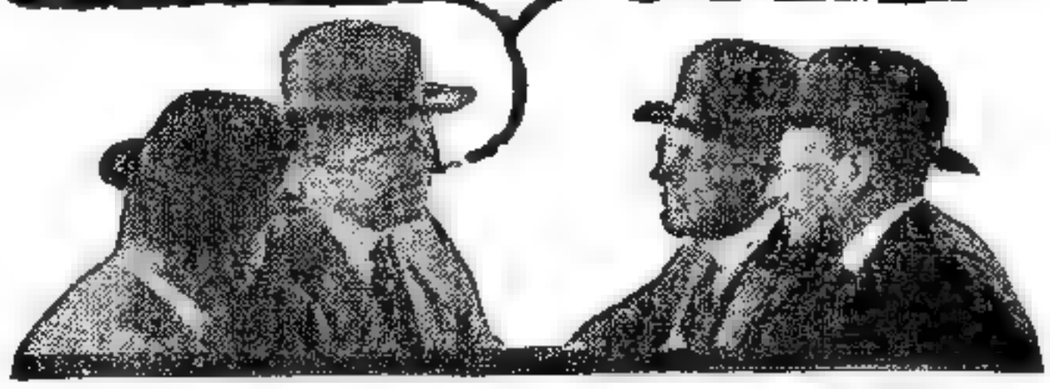

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They may offend others as much as these offend you

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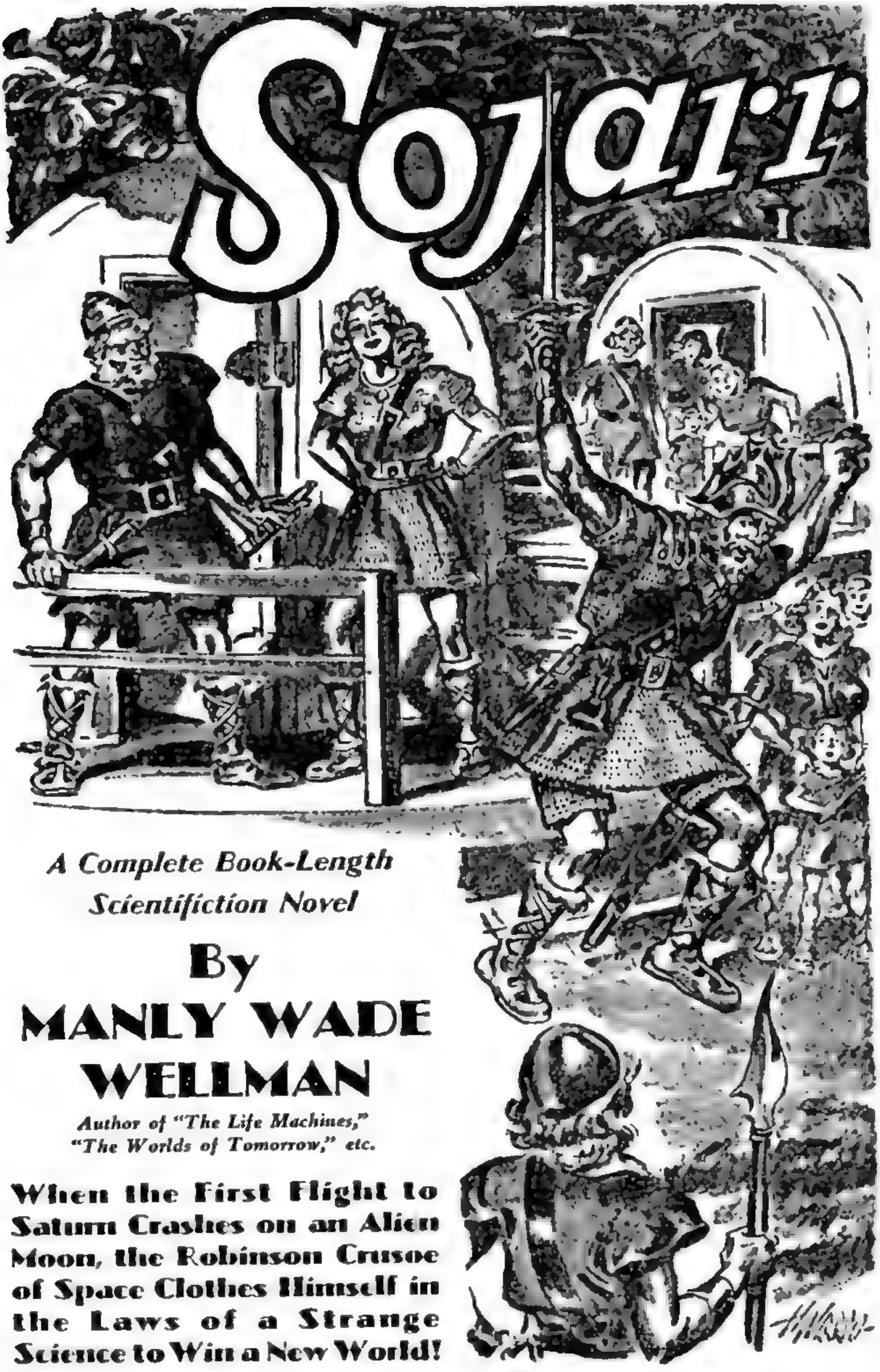

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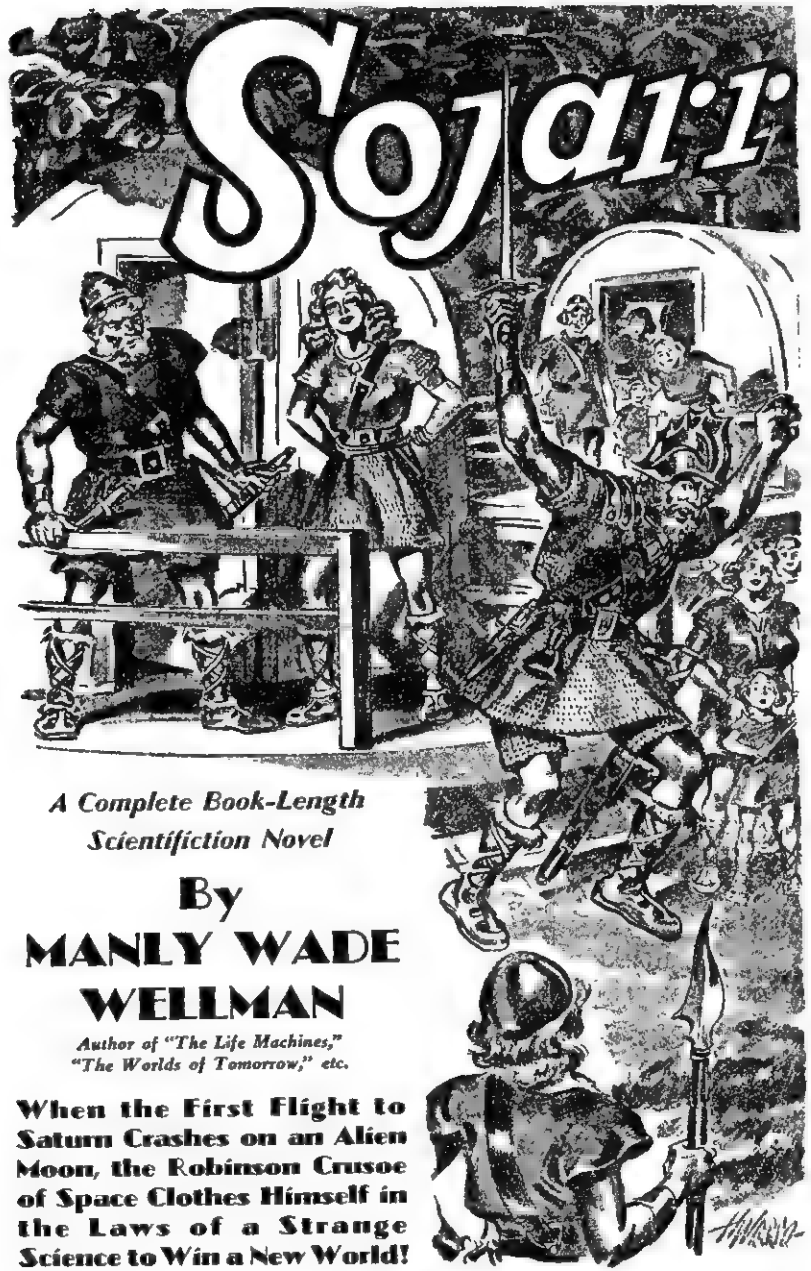

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FOREWORD

WHEN the first rocket ship blasted across space, making the brief journey from Earth to the Moon, men thought the Universe was as good as conquered. Every space flight would be but a logical advance upon that first one, they believed.

For some centuries it seemed as though they were right. There was a successful flight to foggy Venus, then to Mars, with the resultant exchange of ideas and cultures, a bloody war, and finally a powerful interplanetary alliance. Subsequently, with the asteroids as a ring of convenient way-stations, they reached the moons of Jupiter where colonies throve and

Sirek sprang from the platform, drawing his sword in mid-air (Chap. VIII)

offiton

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assumed their own government. But suddenly the old dream exhausted itself.

From Earth to Mars, at closest, is barely thirty million miles—an easy shot with good rockets and cautious astronauts. From Mars to Jupiter is ten times that, but there were the asteroids to help. It was the step following that remained so long untaken—the more than four hundred million unrelieved miles between Jupiter and Saturn at their closest. Moreover, conjunction came only once in a score of years, a brief period of weeks for adventure to make itself come true.

Glory and fortune waited for him who would reach the great ringed planet and its throng of moons, some of them worlds in themselves, repositories of wealth, bases for colonies, with unthinkable possibilities if developed. Those who attempted the mighty leap fully expected to find wonders. But none foresaw the true story of Saturn's attainment, with the mystery and battle and, at the end, a cosmic joke such as only an interplanetary god of comedy could arrange.

CHAPTER I

The Lost Adventurer

"WELL, that's the end of Pitt Rapidan."

Two men, one old and one young, faced each other soberly above the vision screen of the mightiest telescope upon Ganymede. That vision screen still held the magnified image of ringed Saturn and his attendant flock of moons. But the sudden flash that had sprung out on the darkened half of the largest satellite had died, taking with it all hope of a ship's safe landing.

The ship, as it dropped down to the satellite, had fired a burst of deep red, then white, then red again. In space rocket semaphore, the dread signal meant "crashing out of control!"

The older man, the one who had spoken, scowled to hide the pain in his eyes.

"I should have forbidden him," he snapped. "Not that forbidding would have kept Pitt Rapidan at home. He'd have flown a goose-feather to Vega if he felt like it. But I wish I had the satisfaction of knowing that I'd given him warning."

"I wish I'd had the satisfaction of going with him," rejoined the other. He was a big, pudgy young fellow, sandy-haired and shrewd-eyed. He was narrow only in the shoulders and between the eyes, lean only in nose and lips. "I might have succeeded where he—"

"None of that!" His companion cut him off sharply. Then, with less heat: "Sorry, Kaiser. You meant all right. But you know and I know that you never were the space flier that Pitt Rapidan is." He shuddered. "That Pitt Rapidan was."

John Kaiser leaned back, fingertips together.

"Well, Howland," he said with a nasal assurance, "I may prove the contrary to you some day. The first flight to Saturn's system has reached its objective and has been wrecked. I'll make the second flight and a safe landing. Of course Rapidan's rockets blew like a Roman candle. We saw them all the way here. But that doesn't mean the ship itself exploded, or even ruined itself. Here and now, I promise to reach Titan, the biggest moon of Saturn, and bring back whatever record may remain of Rapidan's trip."

Old Howland turned from the instrument and went to the wall of the observatory, where hung a space map of the Solar System. One forefinger he placed on the orbit of Jupiter, the other on the orbit of Saturn.

"You'll wait a long while," he observed bleakly.

"I'm content to do so," replied John Kaiser, slipping a cigarette into a holder.

"Twenty years, or near to it, before Jupiter and Saturn are in conjunction again," Howland continued miserably. "And of course it'll be a very fortunate conjunction—no more than three hundred and ninety-five millions of miles—twelve million less than Rapidan

traveled. Not much more, in fact, than a fairly longish jump from the Martian orbit to the Jovian, though there won't be any way-station on an asteroid for you to refuel and reset." He studied Kaiser with a knowing eye. "And twenty years will see lots of improvements in rocket engines, astrogating instruments and technique. I begin to think that you're making yourself a good proposition."

KAISER was not abashed. He crossed his legs and formed his lips to blow smoke rings.

"You think hard of me, Howland. I understand how hurt you are that Rapidan's finished."

"And his son," put in Howland. "I was little Stuart's godfather, and Nellie Rapidan asked me to take care of him on the day she died. That poor kid, just past three, smashing to death on a world nobody has ever lived to see. Of course I'm hurt."

He turned away, furtively flicking his wet cheek-bone with a knuckle. Kaiser was making calculations on a wad of paper.

"Have you any idea what the Goddard Foundation award for being the first man to arrive safely on Saturn amounts to?"

Howland shook his head. "I know the Foundation posted twelve hundred thousand value units with the Martian Bankers early in the twenty-ninth century. I haven't figured how it may have grown."

"I have. It's doubled every dozen years or so with compound interest, and just now it's somewhere near four and a half billion." The lean lips almost smacked. "Pitt Rapidan would have been as rich as the interplanetary financiers, even the munitions men."

"He wasn't after the reward," Howland almost growled.

Kaiser smiled faintly and shrugged with frank disbelief.

"In twenty years it will double again, plus possible bonuses. Say ten billion. And I'll be still young enough to enjoy it. I hope you'll still be alive to congratulate me."

Howland drew his old body straight. He was leaner and shorter than Kaiser, but rage made him appear to tower

Sojarr

over the bigger, softer man.

"Kaiser," he said in a voice that shook dangerously with passion, "I'm a scientist, and I'm not supposed to consider a fellow-scientist as anything but a brother. But setting aside your talent for space engineering, you're one of the greediest, smallest-hearted skunks in history.

"Please, please!" Kaiser laughed, not at all insulted. He held up his plump palms as though to ward off the condemnations. "I admired Rapidan, too. I recognize the superior cuteness of that little boy Stuart Rapidan. I have a little niece I like very much. But we both know he's dead. The ship went down completely out of control. I have the right to follow his trail."

"Oh, you can have the money," blazed the older man. "As far as I'm concerned, you're welcome to whatever the Goddard Foundation will give you. But you'll never have the glory of Rapidan. He was there first!"

"On the other hand," amended Kaiser, "Rapidan won't have the lecture tours, and the awards from societies and governments, and all that money. Good night, Howland. I'm sorry about your friend, but you'll forgive me if I'm glad for myself."

He left. Howland glared with raging fury after him.

"Why must some good minds be coupled with vicious hearts?" he muttered. "Kaiser's a great technician, a hard worker, and he's brave and adaptable. But down inside, heaven knows him for a louse."

He turned to the wall where the chart hung. Beside it was the frame photograph of a big, black-haired man in the uniform of a space officer. On his knee he held a little boy just emerging from babyhood, but who already had his father's darkness of skin and steadiness of eye.

"Why did you do it, Pitt?" Howland moaned. "And if you had to do it, why didn't you leave little Stuart here with me? I'd have reared him as if he were my own. I would have taught him that his dad was the bravest fool and the most brilliant idiot who ever coaxed a rocket ship through all the loopholes in all the laws of space nature. . . . Poor little kid, I wonder just what did happen to him."

* * * * *

THE little figure stirred in the hammocklike sling amid the tortured metal junk that had been the control chamber for the finest rocket craft of the thirty-first century. Abrupt shock had driven the wits from the young brain, but now they came back and remembered.

Dad had put him there, for Dad was big and strong enough to overcome anything, do everything. Dad had dumped from the sling a great block of delicate instruments, kept there to be cushioned against any crash or other calamity by the shock-absorbing straps.

"In you get, son," Dad had said quickly. "We're going to hit something hard, but I think the absorbers will save you. After that you'll be on your own. Don't forget that you're a scientist, an adventurer, a good soldier—"

Deafening, obliterating concussion! The boy was frightened and bruised, but he did not cry.

"Good soldier," his father had called him, and good soldiers never cry.

"Sojarr," he reminded himself.

He wriggled his chubby legs over the side of the sling. The floor of the control chamber was on a steep slant, for the ship had nosed down out of control and driven itself halfway into the surface of Saturn's greatest moon. At the lower end of the slant was a crushed turmoil of levers, supplies and other litter. Among them lay a big, black-haired figure, recognizable but limp.

"Dad," said the boy. "Dad."

No motion answered his call. The boy slid down the floor toward the figure, touched an outflung hand. That hand wasn't his father's, somehow. It made him afraid. He shrank back against a sprung hatch-panel. His little weight was enough to swing it open. He half-fell, half-crept into the open, and the panel fell shut behind him.

His young eyes gazed with wondering attention at the world into which he had fallen. His three short, protected years of life had given him no set comparisons to tell him that what he now saw was strange. He would have gazed with equal fascination upon high-towered New York, the flat Sahara, Martian moss-plains or Venusian marshes.

The ship had met its final fate almost at the bottom of a great saucer-like valley. The horizons were limited by the rim of that valley and the feathery green of the distant forest that fringed it. Not far below where the metal cylinder had practically buried itself spread a limpid lake, deep enough to look blue, and to it ran swift little streams from the heights above.

The walls and floor of the valley were clothed with meadows of thickly tangled blades and creepers, clumps of flowering brush, and thickets of apparently soft, fleshy fungi far taller than the boy. There was a breath of gentle wind all about, and once or twice sounded a cry from far away, full of clear melody. In the sky flew several objects, certainly alive. One of them seemed more immense than the wrecked ship.

Looking up at these, the child saw two sources of light—Saturn's mighty

hooped globe on one horizon, and the smaller but brighter blob of the Sun directly opposite. He braced his legs sturdily, as though to set himself against opposition.

"Sojarr," he echoed his father's last statement. It was a word of strength. He refused to cry or let himself be afraid.

He was hungry and thirsty, and surely that was water down yonder. He made his way to the lakeside, put his hands into the cool ripples at the brink, then lowered his head and drank. Close to the water's edge grew a bush with stalks and starlike leaves at the crown.

Something fluttered from the cluster as he approached. It was as large as a robin on Earth, but many-legged and fan-winged, like an insect. It had been eating some yellow blobs that might have been berries. The boy gathered two handfuls and found them good, though acid.

The sky grew darker, but not completely dark, for as the Sun set, Saturn ascended. The blue of the sky deepened to purple, and stars began to shine. Saturn exhibited more vividly the various colors of its bands and rings. Was it night? Then he must sleep.

He climbed back toward the wrecked ship once more, but did not go inside. Instead, he slept under the lee of the metal hull. The night was warm and quiet, and lasted as long as a spring night on his native Earth. He woke in the morning, refreshed but hungry again. He made breakfast at the berry-bush and drank as before from the little lake.

"I am Sojarr," he announced aloud.

He had named himself with a noble title, one to which he knew he must prove his worthiness.

CHAPTER II

Sojarr's Childhood

HE played for awhile with flowers torn from the bushes and bright pebbles picked from between the blades of the thick lawnlike sward. But hunger came again, for berries were not too sustaining.

He roamed to another thicket of larger bushes, where grew new fruits as big as his fist, and covered with a tough rind that was almost a shell. Remembering a nut-cracking holiday, he pounded some of the fruits with a stone. They broke open, revealing a doughy pulp that was good to eat and quite satisfying. A creeper grew among the bushes, bearing big tan globes like melons.

The boy found them full of refreshing juice.

He was able to return to play at the side of the lake. Once he fell in. But he scrambled out again and the warm air dried him almost immediately. He slept near the ship again that night. His second morning found him more cheerful and self-reliant than ever.

Providence, which had slain Pitt Rapidan, had made some amends in its treatment of his son Stuart, who now thought of himself as Sojarr. The valley into which the ship had plunged by blind chance was ideal for maintaining life. Doubly warmed and lighted by the Sun and Saturn, it contained plenty of sweet water and a great variety of edible growing things. Almost anywhere else on the three-thousand-mile globe that is Titan, a landing would have been disastrous.

Sojarr, in the valley of plenty and peace, began to live a life that was simple and lovely but not unpleasant.

It had its drawbacks. There were rains that buffeted and chilled him. He tried to retreat into the wrecked ship, but the hatch-panel he had once opened was now jammed shut. When brightness came again, he remembered houses that sheltered people on civilized worlds. He tried to build one with broken leafy sprays slanted lean-to fashion against a rock.

As he grew older and handier, each new hut showed more ingenuity and durability. Eventually he evolved a completely adequate home. Of supple, jointed reeds thrust into the ground in a circle, it was tied with a vine into a rising cone, and then thatched with leaves that were almost as large as himself and thicker than boot-leather. Such a wigwamlike de-

vice sheltered him from the hottest glare of day and the rains as well, but he was long in completing it. In the meanwhile, he had adventures.

One of the many-legged flying things buzzed around him, and he knocked it down with a stick. When he tried to pick it up, it stung him with its pointed tail. The wound swelled and burned, and he spent miserable hours soaking his hot puffy hand in the cool water. After that he avoided such creatures.

Only a short walk from the wreck, he once sought shelter from a shower under some low, broad leaves. They shed the water splendidly, and he sat comfortably under them, not realizing that the largest leaf was curving down around him. He might never have known until too late, had not another creature come to the shelter.

It came with a swoop and a rush. He recognized it as one of the many-legged flying things. Sojarr was in its way. It struck against him, and the spines that covered it pierced his flesh. He cried aloud and ran outside. The creature that had routed him fluttered in the dry space where he had been. The leaf closed as abruptly as a bird-net drawn suddenly tight.

THROUGH the rain, Sojarr stared and saw the animal, half as large as himself, swaddled and pinned in that tight leafy trap. The whole broad plant seemed to quiver and surge, as if pouring its energies into making fast its prey. And Sojarr, his stab-wounds swelling and burning, ran away to crouch under the lee of the friendly wreck.

On another occasion, one of the immense flying things that hurtled far in the sky overhead dropped down. Sojarr was wandering on an open slope that offered no cover. He ran instinctively toward the wreck, and the big flier hesitated to swoop down upon him, probably because the valley depths disconcerted it. Finally it came after him while he was on the edge of the lake.

He had a view of a great rhomboid area, a metallic white luster that shut away the Sun and Saturn. It opened a gaping mouth-slit large enough to engulf him, and extended a whole leash of tentacles, each armed with a claw. Desperate, Sojarr plunged into the water like a muskrat. He knew nothing of swimming, but neither did the huge creature. It searched for him stupidly, then abruptly flopped over. Its other side was quite dark, almost black. Up and up it soared, seemingly without effort, while Sojarr poked out his dripping head to watch.

After that he never strayed far from cover of bushes or the lake, when one of the flying monsters grew visible in the sky.

Other living things were more acceptable. He fished some out of the lake, twisty-shelled creepers that he cracked open like nuts and found full of rich, tasty flesh. Delving for fat roots, he found his little hands unequal to the task. He prowled around the wreck until he found what he sought—a metal splinter that had broken from it. As long as his forearm, it was sharply pointed. This he learned to whet on a stone, so that it became at last a knife.

Now that he had learned how the ship could help him, he tried again to force the wedged hatch-panel, but he was unable to do so.

All this while, days were multiplying themselves. A revolution of Titan was little less than a day of Earth, but the moon also revolved about its parent world in fifteen Earth days. That presented a more complicated shifting aspect to the far but brilliant Sun. Besides, sometimes Saturn shone when the Sun did not. Sometimes they were both present, or both absent. But the darkest night was not without some glow, for two moons beyond Titan were big even to the naked eye.

There was no change of season to irk Sojarr. It was always warm and bright, save in time of rain. He rapidly outgrew the rags that had been his clothing, and went only in a girdle of twisted bark-fiber to support his improvised dagger. His feet he swaddled in big, tough leaves from the vine that bore the juice melons. His hair grew long, flowing down upon his shoulders, and this he bound with another twisted cord of vegetable fiber.

As he grew, he became leaner than the average lad reared in civilization. But his gaunt arms and legs were corded with tough muscles, and his sunburnt chest grew cavernously deep.

He wandered far from the wreck in his daily food-hunts. But he always returned, for he remembered his father even after the passage of time amounting to years on Earth. Though he was not sure what had happened to Pitt Rapidan, he connected him with the tilted hull by the lake. Memories of the civilization he had known in babyhood grew as misty as old dreams, and language departed from him for want of practise. Only one word remained on his lips, and that was the name he had taken.

"Sojarr," he would say aloud, in exultation or perplexity. "Sojarr!" he yelled, to frighten away huge winged creatures that swooped at him, and was repaid by seeing them retreat. The word became his hunting cry or war shout, after the manner of a lion's roar or a wolf's howl.

Vara

ON what would have been his sixth birthday by Earth time, he first came into grave danger. Both the Sun and Saturn were in the skies. Sojarr, following a stream toward its higher source, mounted the slope of valley until he came to the forest. The trees of Titan, with their broad leaves and their spongy or jointed stems, made great shadows. Pausing in his ramble, the boy drank from the stream and would have sat down. But then he became aware that he was not alone.

As he had been drinking, a shadow had shifted almost across him. Something strangely shaped, larger than he, had moved among the stems. Sojarr glared in the direction of that movement. The thing, whatever it was, rustled through the ferny foliage in the direction of the stream's flow. It meant to cut him off. The boy's heart thumped as his young lips drew back from his teeth.

"Sojarr!" he cried.

He was young and small, only a cub, but of a fighting, conquering breed. He had been making his way alone and without help for many days. It was in his stout little heart to offer combat.

Meanwhile the creature moved away through dense green labyrinths opposite, still circling to shunt him from the open lower reaches. He had a brief glimpse of it.

Redder than the reddest fruit, it had a long, humped body, at least six bowed, short legs, and a head with a pointed muzzle like a beak.

Darkness was coming on. There would be neither Sun nor Saturn.

Two eyes peered, yellow-green, at Sojarr. The beak-mouth made a clicking noise.

He never knew afterward whether it was by chance or by some inspiration beyond his age and experience that prompted him to do what he did. The creature was bound to approach somehow. It hesitated to face him now, but darkness would give it the advantage. It was better to bring it to grips now than later.

Sojarr dropped down and lay on his face, motionless as a stone. But in his right hand he clutched, dagger-wise, the splinter of metal that served him for digging tool, knife and gouge. His other hand closed upon a broken branch, spongy but tough. He lay

there without looking up.

Close to the damp-breathing ground he could plainly hear the fall of broad, awkward feet. *Thump, thump, thump.* They were coming close. They stood beside him. From the tail of his eye he saw the beaklike muzzle gape open, showing rows of white, thorn-sharp teeth. To its mind, Sojarr was so much tender flesh for its evening meal. The head came close, close. The mouth widened.

"Sojarr!" shouted the lad, and whirled over on his back.

Both hands came up and at the enemy. His first knife-slash missed. The branch in his other hand he swung as a weapon. It drove home between the yawning jaws. The teeth crunched upon it, and Sojarr's strong left arm dragged the monster close. His knife-splinter darted in again. This time it found a sheath where the beast's long neck joined its clumsy body.

It uttered a chattering wail and tried to jerk away. Sojarr's weapon dragged the wound far open. Hot blood gushed over him. He grappled the enemy, wrestled with it. The spouting flood of gore weakened it. Down it went, and Sojarr flung himself upon it.

"Sojarr!" he cried.

He stabbed again and again, until the many limbs struggled no more beneath him.

HE rose, victor and slayer in his first battle. Tingling, panting, baptized with blood, he gazed at his fallen enemy. His throat filled and trembled, perhaps with words that had long lost their meaning. He would have liked to boast:

"I am Sojarr, strong and brave. A meat-eater hunted me, but I killed that eater as I will kill all else that attacks me. Let all the Universe fear Sojarr, for he will command it!"

But his was not the gift of tongues. He laughed fiercely and cleansed his knife in the dirt. That was all. The fear he had known had passed away. As he strode from the forest, he forgot it forever.

He returned to the side of the wreck to sleep. On the next morning, as if in recognition of his new status of conqueror, the long-jammed door opened to his pushing. He went into the crumpled metal shell.

CHAPTER III

The Voice from Home

THE interior of the ship was almost exactly as Sojarr had left it. Through the rear port-holes streamed the light of the Sun and Saturn. Almost at his feet, as he crossed the threshold, lay the mass of wreckage that filled the buried forward part of the vessel. Among it sprawled a jumble of vari-shaped objects, all of a clear dull white. He gazed strangely at the bones. They lay where something else had lain before—a silent form like his own, but larger and with black hair like his.

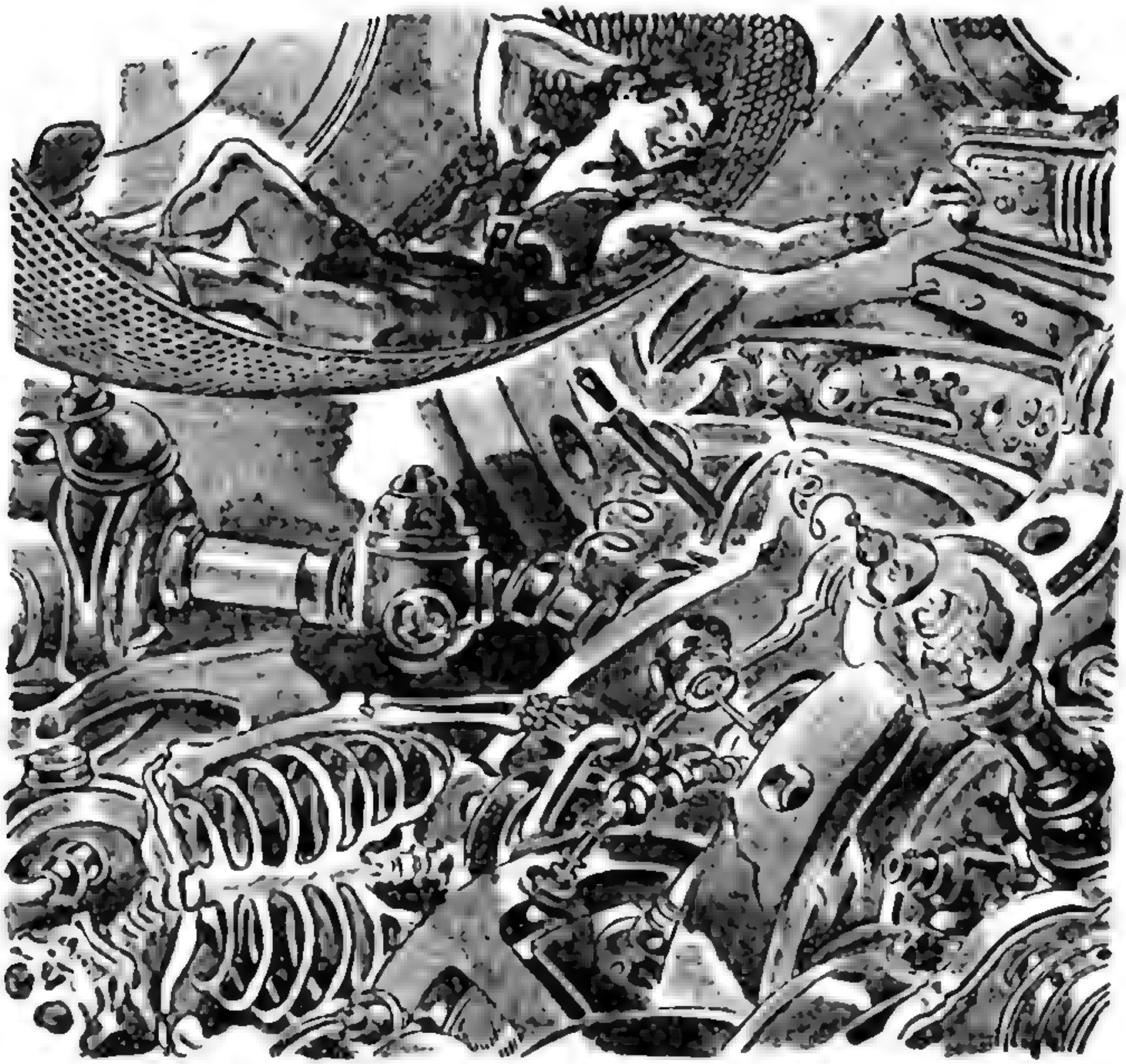
"Dad," he said, remembering the word. "Dad."

But the clearer memory of who Dad was did not come. Sojarr entered the cabin, looking at other things. Among the smashed instruments and furniture was one device that he immediately seized. Recognizing it for what it was, he appropriated the knife.

Once that blade had hung at the hip of Pitt Rapidan, his father, as part of the uniform of a space officer. Now it had come loose from its belt and lay half-out of its copper sheath.

Sojaar examined it, tested its needle point and razor edges on a cautious thumb, snicked it in and out of the sheath. He smiled in approval and thrust the sheath into his vine belt.

He climbed the tilted metal floor toward the less damaged rear of the compartment. Halfway up was something that jogged his memory—a hanging net of straps and slings, moored to springy shock-absorbers. Sojarr had once been in that. Dad, the individual he was trying to remember, had put him in it. He climbed in again, found the sling comfortable. He stretched out his brown legs and



Sojarr turned a round protuberance that swiveled under his touch (Chap. III)

yawned. Lying there luxuriously, he gazed about him. His searching eyes came to rest upon the nearest bulkhead.

In the metal appeared a rectangular inset, faced with black enamel and furnished with shiny knobs and transparent discs. Sojarr turned over in his hammock to study this curiosity. He extended one hand and turned a small, round protuberance. It swiveled under his touch. Behind one of the shiny discs a light suddenly glowed. Then Sojarr heard a noise.

Some of the small scamperers and flutterers that inhabited the valley with him had sweet, chirping voices, but nothing had prepared him for melody like this. There was a rhythmic, stirring rush of tone in which many strange sounds were blended, none of them the voices of living creatures. But they were all so joined and ordered that life and intelligence obviously directed them.

Sojarr felt the rhythmic vibration of the music swiften the fibers of his heart and the courses of his blood. He swayed to its tempo, and the sling in which he lay took up the motion. Instinctively his hands clapped to mark the accent. His eyes stung as he shed for joy the tears he would never shed for fear or pain. And then the succession of wondrous sounds came to an end. There was a pause before a voice deeper than his spoke cheerfully.

"To all who fly the spacelanes, to whatever ship and crew may hear, this program comes as friendly greeting and recognition. It emanates from the Station of the Worlds at Pulambar, pleasure city of Mars. . . ."

SOJARR did not understand, but he had once understood some of those words. They were spoken by a member of his race, in the language of the being he identified as Dad. Strange pulses beat in Sojarr's mind. He felt that he was on the threshold of a magnificent experience.

"And now, more music. Stand by for a new song, written especially for space fliers. 'The Rover of Space'."

The voice ceased, and again music vibrated the chords of his responsive heart.

"The Rover of Space", had been deliberately composed as a stirring tune, to glamorize the spirit of adventuring between the worlds. If the first tune had thrilled Sojarr, this one entranced him. He swayed and swung in his hammock, delighted beyond endurance. And then, of a sudden, a singing voice joined the instruments in the refrain.

I am the doer and darer,
  I am the rover of space.
Out in the airless abysses,
  There is my pleasure and place.

Turning my back on my home world,
  Outward by fate I am flown,
Borne on the blasts of my rockets,
  Seeking for worlds unknown.

Sojarr was stirred to the soles of his leaf-bound feet. He listened with awe, till the chorus was sung to him again. Sojarr began to repeat the words of the singer far away on Mars. His tongue and lips, long unused to forming sounds, fumbled most of them, but some of them he fashioned properly with a speech mechanism that had not entirely lost its conditioning.

He lay back, thrilled with the delightful effort of establishing new association with words that had once had meaning for him. His father and mother had both been intelligent and educated, and they had carefully explained every word that puzzled him. While the working vocabulary of a three-year-old child was usually five hundred words, and his recognition vocabulary four times that, little Stuart Rapidan had been given a working vocabulary of twenty-five hundred words and more than three times that in recognition. Three years of disuse had merely slipped them below the level of consciousness, to await the prod of a voice other than his own.

For an hour he listened to the program. Then he twisted the dial again. As he had foreseen, the light went off and the music and voices were stilled. But Sojarr knew that a twist of the dial would bring back more music, more speech. Just now he felt like resting and thinking of the faint memories that had half-returned.

At last he went forth to hunt for his belated breakfast. But thereafter Sojarr slept in the hammock and listened to the radio. Its storage battery, powered to last for years, worked flawlessly. Somewhere far off was a dreamlike existence, peopled by many creatures whose voices were like his, who did wonders of strife, toil and pleasure he could scarcely comprehend.

As Sojarr grew in size and knowledge, the valley in which he lived seemed to shrink. It was no more than twelve Terrestrial miles in diameter, an easy day's tramp for a sturdy half-grown boy. Only the steepness of the upper ridge kept him within it. He began to wonder if the worlds of song and talk brought to his ears by the radio did not lie beyond his horizon. He promised himself to find out when he was able to climb well enough. In the meantime, he rambled and played in the pleasant country that was his.

Sojarr learned to climb, swinging on dangling creepers and teetering on horizontal limbs in the thickets. He became an accomplished stone-thrower, sometimes actually knocking down the flying animals as they swooped low. One species, small and furry with membranous wings, he found good to eat. When he had saved enough of the silver-grizzled

skins, he made himself a rough cloak, which he fastened together with thorns and fibers against the intermittent rains.

HIS conquest of the beaked sextiped taught him danger and his own power and ability to meet it. Several times, out of sheer hunger for excitement, he ventured into the hanging forests on the upper slopes, looking for trouble. Others of his enemy's race were there, clumsy and savage dwellers in great scooped-out caves.

But meanwhile Sojarr had grown, so they did not seem so deadly. He had acquired a new weapon, too. With the finding of his father's knife, he had bound his own improvised blade into the cleft of a long, tough branch with stringy root-fibers. He thought of this as a long arm with a dagger. In reality it was a spear like those his remote ancestors of Earth's stone age had evolved. With it he met the charges of the sextipeds, impaling them and laughing at his cunning.

Stranger and more deadly was the thing he met in those higher fringes on a thick-grown trail one day. At first he thought it was one of the mighty burr-fruits, black and shaggy, that hung on some of the bushes and grew more massive than himself. It was lumpy and dark, lying almost across his path. Sojarr's experiments had taught him that burr-fruits were full of toothsome pulp, and he extended his spear to touch it.

The thing straightened up suddenly —an erect creature with many claw-tipped limbs and nasty multitudinous eyes. Like Sojarr, it bore a long, shiny, sharp weapon, but its weapon was bigger than Sojarr's knife. It made an ugly, hoarse sound.

"I am Sojarr!" cried the boy to hearten himself.

He backed away cautiously. The monster growled throatily, in a fashion strange but articulate, as though it made inquiry of him. From a belt it scooped another device, lifted it. The end of the shiny thing made a spitting noise, and Sojarr felt a whipping blow on his shoulder. It knocked him over backward, but he nimbly rolled over and fled. Plunging into a clump of leafy shrubs, he kept perfectly quiet.

The thing whose rest he had disturbed went crashing about in search of him, grumbled when it failed, and finally departed. It apparently lived above the rim of the valley. Sojarr sagely decided to avoid that territory. He stuck to his lakeside and his radio.

Sometimes, after listening to the voices from so far away, he felt a sad, yearning emotion. It was loneliness, the gregarious instinct of humanity coming to life in him. Because he thought it was hunger, Sojarr ate hugely and without satisfaction of the fruits that grew on all hands, of the shellfish and, as he learned to catch them, of the silvery swimmers—not Terrestrial fish, but comparable to them—in the deeper part of the lake. These latter creatures he found especially palatable. In his pursuit of them, he learned to swim by a long process of splashing and floundering.

By the time he was half-grown, he could dive and race through the waters as though born in them. Titan's lesser gravity, a scant half of Earth's, kept him from ever being near to sinking and drowning.

Another pursuit, that of small game, taught speed to his feet. He learned to run down nimble hopping creatures the size of his hand, which were tender to eat. Sometimes he hurled his spear after the quarry, transfixing it. He became as adept in this skill as in all his others.

THE ship remained his home. Its rust-resistant alloy kept it intact though tarnished, and he always left the hatchway closed, merely propping open a port-hole for fresh air. The radio continued to give him instruction, though many of the concepts it voiced were too complex for his unaided mind to grasp. He speculated, however, on ideas that bridged the gap to his childhood existence on Earth.

Since the programs he heard were special space broadcasts, designed for the entertainment and instruction of crews aboard rocket ships, there was considerable emphasis on travel between worlds. Much of this, espe-

cially abstruse mechanical shop talk, was far beyond Sojarr. But he kept speaking the words he knew, adding others that formed natural associations with them. Several times, his subconscious mind, that had never let go of a single scrap of his earlier experiences, almost burst through the veil of the long, lonely years.

"Who am I?" he would ask aloud. And then he would reply with the best answer he could give: "I am Sojarr."

CHAPTER IV

The Car-Dwellers

THE little handful of people that was left from the following of Birok traveled as swiftly as the battered vehicles would let them. They streaked down a tunnel through the forest—one of those travelways beneath the lofty branches. Worn by wheels and kept bare of the insistent vegetation by salting, the paths were the only stationary evidence of civilization upon Titan.

Like other habitable worlds, Titan also has continents, oceans, rivers. There are few deeps or heights, a valley like Sojarr's being rare indeed. Almost the entire surface of this warm, fertile satellite is grown over with lofty, green, dense forest that stirs with life and the things that support life. Perhaps the ease of living explains why no great civilization ever grew up there. Perhaps there is another explanation. At the time Sojarr lived in the wreck, however, it was the permanent, only fixed habitation Titan had ever known.

The following of Birok rode, as did other followings throughout that world, in a train of massive, box-built cars.

Each of these, built of hand-hewn planks, ran upon wooden wheels that were cross-sections chopped from trees of the proper size. Smaller stems, chosen for toughness, formed the axles. The main fastenings were also of wood, hard pegs skilfully whittled and driven in. Other bindings and reinforcements were of rawhide from large animals. Of rawhide, too, were the belts and tethers that turned the wheels by power of the one metal construction — a remarkably efficient heat engine.

Any of the cars could travel under its own power, but generally the chief's car towed the others.

Such rolling communities kept the forest roads open and smooth for the most part, though some of the less-traveled ways were rougher and narrower. The present one was no more than a corridor, walled and roofed with close-woven foliage, along which it was hard to press through, even with the engines of several cars laboring. Yet Birok would have been happier if it had been narrower still.

He stood, not at chief's station on the front platform of the leading car, but on the rear platform of the last. His face was as dull and heavy as the ancient scale-armor he wore on his chest. His long, straight sword appeared too heavy for his hand. Even his tawny beard, generally a bristle of assurance, seemed to droop.

"I hear them," he sighed to the watcher beside him. "They are smashing a wider way to pursue us."

His following had come that morning upon another caravan, of more and larger cars and carrying not men, but Titan's other race, the inimical Truags. As so often in the past, there was battle, Birok's warriors against the gross, hair-matted things that were at once wiser than animals and more evil.

To Terrestrial eyes, a Truag would look like a cross between a huge spider and a spiteful ape. Standing erect upon flat slabs of feet, a Truag had two pairs of jointed, claw-handed arms, a black fuzzy body and a round head from the matted thatch of which glared a cluster of eight wicked eyes. The things could speak the language of men, and steal their weapons, tools, engines, armor, cars. . . .

In the end, after quick bloody strife with swords and the simple hand-guns of Titan, Birok got the worst of it. Two of his cars were rushed and captured. Some of his best warriors had died in an effort to defend them. For the survivors there was only flight down this rough, narrow refuge. Only

the greater size of the enemy train staved off immediate capture and destruction.

"They'll have to stop and enlarge this path," consoled Birok's companion, the old sage Kaulo. "By then we will have reached a main travelway and rolled out of their grasp."

BIROK dared to hope then. He made his way forward bumpily, for the road was rough and his cars without springs, to check the supplies and facilities. The six remaining cars, each fitted for the dwelling of a family clan-group, were filled with sad faces, some of them bloody and bruised.

Birok surveyed the fuel supply first. There was enough tuvo, the heat mineral that burned on exposure to air and empowered their engines, for several days' travel. Next he looked at the water, which was needed to make vapor-pressure. There was not so much of that, but he expected to find a stream along the way, or a water-vine whose bladders could be punctured to fill the clay-lined tanks.

For food, there were some bins of dried and fresh fruit, a baking or so of meal-cakes, a few joints of meat preserved in a coating of vegetable gum—short rations, until the following could reach safe latitudes and gather more supplies.

"Have courage," he cheered his followers. "We did our best against a bigger force."

"The chief of that Truag following is called Hekta," grumbled a grizzle-bearded warrior with a sword-slash on his cheek and another across his right forearm. "I heard his name shouted as their war cry, and I know he and his men are mighty. Birok, you should not have given battle to so powerful and fierce a band."

"True, true," agreed several others who had suffered in the skirmish. "Birok was wrong to do so. Weak followings must stay away from Truags."

"I did my best," retorted Birok. His beard had regained its vigorous jut. "Do not criticize me unless one of you is ready to win the leadership from me in single combat."

John Kaiser

That quieted the grumble to the whisper, and Birok entered the leading car of the train. The lookouts were dubious. It became balefully evident that this was no side approach to a main travelway, but some ancient wanderpath that would come to a dead end.

"In such a case," said Birok, "we must cut a new trail."

"If we do that," said old Kaulo, who had followed, "the Truags can follow us by enlarging more swiftly than we can go by new cuttings."

"They may cool their anger and withdraw," Birok suggested without confidence. "Let us go as far as possible. It will be a day or two—perhaps many—before they cut a way to us. If worst comes to worst, we can fight them again."

Both Birok and Kaulo knew that another battle with the Truags would be indeed the worst come to the worst. They scowled at the pressing walls of greenery, straight, massive stems, smooth or jointed or scaly or spongy, with leaves as broad as blankets and upper weavings of vines as thick as men's bodies.

The heaven-born Kai—who had come here to create man and give him the world previously ruled by the evil

Truags—were said to have planted the life-giving vegetation on barren continents. But both the leader and his counselor wondered in their hearts why the Kai might not have been a little less generous with that gift.

As they talked dispiritedly, a lookout from the front platform gave a sharp cry of warning.

"Off power brakes!" he yelled. "Stop the train, or we are lost men!"

OTHERS sprang to the engine and to the big pivoted staves that acted as brake levers. Even at that, it was close. The foremost car came to a halt not more than ten lengths of a man before the flat brink of a precipice.

Birok and Kaulo sprang down and trotted forward to see. They had all but plunged into a great circular valley, timbered on the upper slopes but with a more open floor and a gleaming lake. Something else gleamed even more brightly near the edge of the distant water. Kaulo shaded his eyes.

"Surely that is metal," he commented.

"No, how can it be?" asked Birok. "Metal can be gained only a little at a time, by heating with tuvo the meteors that fall from heaven."

"Speaking of tuvo," went on Kaulo, "I have heard my father, and other of the old men of my day, tell about this valley. It is sparsely covered with vegetation because of the great amount of tuvo in its soil. We have never sought for it, because our travelways do not lead here. Yet—"

"Yet we have little time to guess or to explore," said Birok. "Hekta and his Truag devils are on our heels. How do we leave here?"

"Only by going through the valley," stated Kaulo. "We must abandon the cars."

Birok grunted distastefully, for he did not relish going afoot. And there was something even worse. In the sky above the valley hovered a kite-shaped thing, which all knew and feared.

"A ruak, looking for man-meat," whispered one of the following. "We dare not venture into the open."

"Ruaks do not like to drop into low altitudes," said Kaulo. "Anyway, we are all armed. We can beat the monster off. Come, we must abandon the cars at once."

The malcontents of the following protested, but Birok gave them their choice of retreating afoot or remaining to face Hekta. They knew there was no choice.

Food was packed, all the tuvo in its coating of damp clay, weapons and other movable possessions. Not only the men, but the women in their simple, brief tunics, and the half-naked children, were given as much as they could carry.

When all were out of the cars, the engines were set in motion again. The train chugged forward without guidance. It plunged into the abyss with a great, echoing crash.

"Let us pray the Kai that Hekta, looking down, will think us also fallen to destruction," said Kaulo glumly. "He might then be satisfied and seek us no further."

On foot, the band climbed down. It was slow, unhappy work. In silence they negotiated the hanging woods which were quite thinly grown, for some barrenness of the soil modified the vegetation here. They went on past the splintered ruin of their swift and comfortable cars, the only homes they had known. They approached the edge of the covering trees.

"We shall wait until Hekta is gone from hereabouts," decreed Birok. "If we go into the open, and he spies us—"

A cry from the scouting party at the front of the march brought him at a run down the hill.

Two young warriors, with drawn swords, were facing a naked, brown boy. Though just growing into a youth, he was darker, bigger and more muscular than any man in the following save Birok himself.

CHAPTER V

Birok's New Recruit

SOJARR had been well up the slope at the very point where the string of cars had crashed to ruin. Curious and unsuspecting, he had scrambled up

toward the source of the great, echoing noise to investigate. At the edge of the timber, he came face to face with such creatures as he never remembered seeing, save in the mirroring depths of the lake.

They were like himself in shape, though hairier, with strange coverings for their bodies and stranger weapons in their hands. Birok's people did not all possess armor. That was for leaders. The two scouts had only leather swaddlings around the chest and waist, with simple buckles on their belts. Each bore a sword of wrought iron, and one had a fork-headed javelin. They were as amazed to see Sojarr as was he to see them.

"What people are you?" he asked in the language he had learned by listening to the radio.

They shouted back inflections he could not hope to understand, lifting their weapons to threaten him. Sojarr retired a pace, lifting his own spear with his right hand and drawing his dagger with his left. Having been his own master and provider since early childhood, he was not one to fear or flee.

He turned cautiously when he heard more voices, deep and excited. From the trees came half a dozen more of these creatures that were like himself, but fairer and softer-seeming. One gave great shouts that impelled his companions to take up a certain extended position. This one had a cascade of bright hair on his face and was dressed in the hard, dull-glowing substance that made up the weapons of the others. Beneath a close-fitting cap of metal that covered his skull as a shell covers a nut, his blue eyes glared commandingly.

One of the younger warriors slipped around behind Sojarr and seized him. The others roared in triumphant laughter, which broke away into apprehensive yells as Sojarr, twisting suddenly in the arms that held him, caught the attacker around the waist and flung him somersaulting down the hillside. His Earth-born muscles and the wild years that had developed them gave him a strength already greater than these full-grown men of Titan.

The men were upon him in an instant. Hastily he threw his spear, missed, then slashed a charging face with his knife. But there were too many hands for him to beat off. Several straining bodies weighted him down, while cords slipped tight over his wrists and ankles and turned in quick coils around his body. When the strange creatures drew back, panting, he was a bound prisoner.

It was too much for his puzzled young mind. He could only glower while the leader of the party stood over him, growling out truculent gibberish.

But another of the strangers made himself heard, facing the armored chief and giving him argument. This one was smaller and leaner, and the hair of his head and face was quite gray, but apparently he was making a point.

HIS hand drew Sojarr erect, firmly but not roughly. When the warrior whose face had been slashed came forward with a snarl, the gray man's elbow shunted him off.

Sojarr knew nothing of the langauge, yet he sensed that this older stranger meant well by him. And indeed the threatening ones relaxed their deadly expressions. The fair-bearded chief spoke impressively, and the party—most of it issuing at last from the trees—started on downhill. Sojarr hobbled along in his bonds, led by the gray man who had spoken for him. The gray man pointed questioningly at him.

"I am Sojarr," cried the captive defiantly.

"Sojarr," repeated the other at once, and laughed.

That, too, was a recognizable voice-trick. Sojarr laughed in turn, though he knew he had little reason to do so. One or two of the youngest men who moved near him joined in with their own good-humored chuckles.

"Sojarr," said the gray man once more, pointing to his captive. Then, touching his own leather-clad chest, he identified himself. "Kaulo."

Sojarr repeated the word, and was applauded with smiles and a pat on the shoulder. Feeling a trifle better, he took stock of his captors. They were about sixty in number, not only armed

men like those who had first appeared, but slighter, smaller ones and little half-naked scamperers. Sojarr, who had observed lesser animals, could judge that these were the females and young. In complexion they were lighter than he, for he was brunette and deeply tanned.

Their clothing interested him greatly. There was no attempt at fitting either the leather or the rough-woven fabrics, both of which were worn in folds or wrappings. Several turns of a strip made a kiltlike garment. A larger piece was worn like a cape or toga.

A simple kind of body armor consisted of a length of heavy leather, spiraled snugly around the torso from waist to armpit, with a looping of the end over the left shoulder. Exceptions to this simplicity of garb were the sword-belt, neatly cut and fitted with stout buckles, the stout-soled but flexible sandals, with cross-garterings up the shin, and the metal armor of overlapping scales, which was well enough forged to excite admiration in far more critical minds than Sojarr's.

That night the group camped by the lakeside in the valley's floor. They made no fire, lest the enemy be watching and know where they were.

In the dusk Kaulo loosened most of Sojarr's bonds, keeping a strand around his wrists and another, like a leading string, around his waist. The old man fed the boy with fruit and cooked meat, the latter new and delicious to Sojarr. They smiled at each other, and then Kaulo began to teach Sojarr more of his language.

The big fair-beard who led the following was Birok. Other people had special names. Sojarr learned the terms for hands, feet, the food he ate.

At last he slept close beside Kaulo, who seemed more friend than guard.

It had taken Birok's following only one day to reach the valley's floor, but to climb the slope opposite was a full two-day task. Sojarr marched with the column, learning more words from Kaulo and others who joined in the task of instruction. At the top they came into thicker and thicker timber, so close-set that it was almost impassable.

Birok sent an active youth to climb a tree and view the country. The climber reported on his findings, pointing straight ahead. Birok set all the men to hew a path in that direction with their swords. It was hard work, and necessitated the entire group marching in single file. But by nightfall of Sojarr's fourth day with the party, they came to the goal the scout had discovered. A road through and under the trees, narrow but fairly well traveled, gave evidences of joining a main way farther on.

BIROK sent a few of the best hunters to procure food. The rest of the following produced broad chopping blades and jagged saws, and began felling selected trunks. Some hewed and split planks. Others, working on trees of greater diameter and harder grain, sliced off sections to be used as wheels. Birok and Kaulo now evoked a new wonder for Sojarr to gape at.

From baskets topped with wet clay, they produced brown clodlike chunks of the precious heat mineral that, upon exposure, glowed to intense heat. With its help they reshaped and refitted metal machinery salvaged from the train they had been forced to wreck.

Held prisoner, Sojarr was divided in amazement between his busy captors and the forest. Nothing of the vegetation of his valley, even the timber on the upper slopes, was like this. Each side of the roadway was walled by thick-grown stems, rising many times the height of a man, smooth or scaly or jointed.

A few had branches close to the ground. But most put forth foliage only on high. Here the boughs interlaced and the monstrous leaves tangled. The whole was bound together with vine-tendrils as thick as men's legs, so that there was a thick roof, shutting away the Sun. Between these stems grew dense bushes and shrubs. Some were like the flora he had known in the valley. Others were strange and grotesque. On high were flashes of brilliant color—the flowers of Titan, spread out under the Sun as large as an upturned parachute.

While Sojarr gazed and pondered,

Urvasi pushed the ray thrower beneath Sajan's arm and slayed the Trunge (Chap XX)

the community work began to take shape as a rough car, six-wheeled and six times the length of a man.

This took days, and in the meantime Sojarr was learning to speak and understand the universal language of Titan. Not only were the words absolutely different in sound and relationship from those he had learned by listening to the radio, but so were the ideas they expressed. Kaulo was patient, though, and Sojarr was intelligent. By the time the first car was finished and a second begun, he could fashion simple sentences.

"I will not run away if you leave me untied," he told Kaulo.

"Birok hesitates to trust you," temporized the old man. "We still have trouble understanding how a lone boy could have grown up without belonging to any following and without a word of the language of men. Birok has a theory that you are a cross between man and Truag. Your hair is dark, and ours is not. He says you may be a spy for Hekta or other Truags."

"What is a spy?" asked Sojarr. It took considerable explaining. He stated: "I am nothing like that. I grew up in the round, deep place where you found me. I knew nothing of the world until you brought me out of it."

"The world is very large," said Kaulo weightily. "Trees and other plants cover all the land and much of the water. You will see many wonders if you travel with us, Sojarr. Perhaps we will adopt you into the following. That is what I suggested when first I saw you, for we need strong young warriors after losing so many. But that dark hair and skin of yours has caused suspicion. You must prove that your heart is white."

Sojarr felt rebuffed, the more so because he had been made sensitive about his difference in complexion.

"I can be useful in hunting and fighting," he urged. "I am young but strong. Let me show you."

KAULO dared not vex Birok by freeing the captive entirely, but he did loose Sojarr's hands, keeping the rope around his waist. With a handful of pebbles, Sojarr went a little way from the building camp and adroitly brought down four edible flying things by accurate throwing. Such additions to the larder were well received and won him more friendship. That night some of the young men wrestled for sport, and Sojarr grew interested.

"That seems good to do," he ventured. "I would like to learn."

Only a few had seen how easily he handled the first warrior who had seized him some days before. One of the biggest youths patronizingly offered to teach him some grips and throws. For a few moments the science baffled Sojarr. But when it came to a fair hug and struggle, he threw the older man heavily. Howls of amazement and applause rang out, and warriors gathered around Sojarr.

"What is the secret of your strength?" they demanded, feeling his bulging young arms. "Some of us are lean and hard, others big and soft. Your muscles are both large and hard as iron. Perhaps you are not of the blood of the Truags, after all. Perhaps you are of the race of the Kai."

"What is the race of the Kai?" asked Sojarr.

Kaulo told him that, too, for it was the principal religious faith of Titan. The Kai were folk who had once come from the heavens, beyond the great hooped ball that swam overhead even now. They knew all things were immensely strong and brave. They had taught men the use of cars to maintain life in the thick forests they had sown, which might otherwise choke men's enterprises to death.

"They taught that salt, gained by boiling sea waters, will keep our roadways from growing up too fast," finished Kaulo. "They taught us to cook the meteors that fall from heaven, and win from them such metals as iron. They discovered tuvo, the heat mineral that runs our engines, and organized us into followings. While they ruled, the evil, hairy Truags who now threaten us dared not show their ugly faces to men. They gave us our laws—help each other in work, food-getting and fighting, and obey always the leader who is the strongest."

"Oh," said young Sojarr. "The

leader is the strongest? But what if one of the following becomes stronger than he?"

"Then he is made leader," said Kaulo gravely.

There was silence in the lounging throng. Birok, who had heard, spat into the fire and scowled. His eyes glared at the young stranger who asked such disturbing questions. He wished that a ruak would accommodatingly swoop down and carry Sojarr off.

It behooved Sojarr to be tractable and humble. He worried more than he cared to tell about his blackness of hair, for this seemed unbecomingly different from the tawny tresses of Birok's people. His swelling muscles had gained him praise, and one warrior had even supposed that the heaven-born Kai were his people. But he had heard that the Truags also were strong and cunning in battle. Might not his strength as well as his complexion support Birok's theory that he was partially of Truag blood?

Sojarr puzzled and mourned about it. He bewailed the fact he was not as other men were.

THOUGH Kaulo was kind and helpful, after so many solitary years, Sojarr was proving adept at keeping secrets. Not even this friendly elder was told of his strange home in the valley, nor of the wondrous speaking machine that sang and told him of marvels beyond anything on Titan. That, Sojarr decided, would remain his own until such time as he would gain an advantage by revealing it.

Meanwhile, he was respectful to all in the following. He lent a hand in the work and the hunting, and repeatedly assured them of his intentions to support them in any battle or labor.

Whatever Birok's suspicion and dislike of the stranger, he did not cast a dissenting vote when, at Kaulo's appeal, Sojarr was finally taken into the following. He even joined the praise when Sojarr proved himself adept at hunting and handicraft.

From the first, the youth was accepted as one of the active warriors, rather than as an unproven boy. Youngsters of his own age were too weak and slow and futile for real companionship, Sojarr thought. He wanted to play a man's part in the following, under his chief friend and mentor, old Kaulo.

His great triumph was in making a sword. After he mastered the science of working metal, he got back both his knife and the massive splinter of alloy that had been his spear-head.

The alloy he brought to a white glow on a hearth of stones with a lump of heat-gendering tuvo among them. Then, on a larger flat rock, he hammered it into a longer and leaner blade. Under Kaulo's supervision he shaped it into a deadly weapon, longer than his arm, as thick as his two fingers, two-edged and sharp as a thorn. Kaulo also helped him make a hilt of bone with rawhide lashings, a cross-guard of wrought iron and a round lump at the pommel to balance the weapon.

"It is a wondrous weapon," pronounced the elder, trying the new sword's swish in the air. "See, it bends and springs back like a green twig, yet it is sharper and tougher than our swords of iron. I never saw such metal. Where did you get it?"

Again Sojarr forebore to mention the wreck. Some day, he decided sagely, that vast amount of sword-stuff would profit him greatly.

"I found it in my valley," he evaded.

CHAPTER VI

Hekta's Captive

HE learned to fence and found that at first his strength and agility were of little avail. Seasoned old warriors taught him, with whittled staves for foils, that he was a clumsy novice. The younger men Sojarr had conquered in wrestling, running and hunting had the opportunity to jeer at him. But with time and practise, Sojarr grew to excel in swordsmanship, as in all other skills.

One by one he bested his teachers, then the important swordsmen of the tribe. Only Birok refrained from matching skill with him, making ex-

cuses and glaring glumly. Sojarr wore his excellent sword in a sheath of iron-studded leather, never setting it aside all day and keeping it within hand's-reach at night.

Another weapon that took practise and study was the simple hand-gun that Titanian science had developed. It was a simple but massive cylindrical barrel with a wooden grip and a spring-button instead of a trigger. The weapon was loaded from the muzzle, first with a fragment of clay-coated tuvo, then a bullet of iron or stone. When the button was pressed, it brought down a plunger that crushed the tuvo. Thus exposed to the air, the mineral exploded into gas, forcing the ball out toward the mark.

There were not many of these treasures in the following. Nobody thought of a gun that would need more than one hand. The other was better free, in hunting or war.

All this time the following was rolling in its new cars along the forest ways. There were occasional leisurely stops while women gathered fruits, roots and vegetable juices. The men for their part hunted game, preserving the meat in layers of gum. Occasionally there were little clearings, caused by the presence of tuvo in the soil. Then a halt would be called, to dig for the vital mineral.

There were generally encounters with other strings of cars at these favored points, always beginning in the same way. Both strings would come to the halt while lookouts peered, then offered suspicious challenges. When the strangers were human, there was generally a pause and a palaver. Each group lugged out such articles as it had in plenty, seeking to trade for those it lacked.

There was swapping of news, too—sketchy rumors of fights in distant quarters of the world-wide forest, new-discovered outcroppings of tuvo or falling of iron meteors, places where game was either plentiful or scarce.

Almost always there was stealthy maneuvering on the part of young men. Sliding into the timber at either side of the road, they would peer out to find such young girls as seemed unattached and unguarded among the strange folk. Finally there would be a rush, a struggle, a chorus of shrieks not always terrified. For that was the way of marriage on Titan. One had to capture his wife from another following. Even though the two young people had met before, had even planned to marry, the ritual of chase and seizure was necessary.

"It makes for new strength, sometimes for alliance and friendship," Kaulo told Sojarr, who was mature enough to be interested in such matters.

"Does it not also make for warfare?" asked Sojarr.

Kaulo shook his gray head and grinned.

"If we were to fight over every stolen girl, there would soon be no men left and the Truags would rule this world again."

When the unknown caravans held Truags, the two strings of cars passed gingerly and watchfully as far apart as possible. The two rows of windows facing each other would be lined with stern faces and armed hands. Bearded human warriors faced ugly many-eyed Truags. Sojarr recognized the creatures as the race of the vicious man-like beast that had attacked him long ago.

ON one occasion, Birok's cars came face to face with a string of larger and more numerous vehicles. There was a pause, a challenge, then frantic orders for reverse power and flight. The bigger train pursued for half a day before Birok finally coaxed enough speed from his engines to escape.

"That was Hekta," Kaulo told Sojarr. "We fought him and his Truags once. Yes, that was the same day we found you, I think. We do not want to fight him again."

The following camped one evening at a wide place on the travelway, for the purpose of mending a damaged part of an engine. In the midst of the labor rang out a shrill, frightened cry of warning.

"Ruak! Ruak!"

All plunged into the forest save So-

jarr, who had not learned the word. Gazing up, he saw dropping down above him a rhomboid flying monster like those that had threatened him in his youth in the valley. He refused to be frightened, and there was no timt to flee or hide. The mouth of the thing gaped above him. He fired his hand-gun into it and yelled, waving his swiftly drawn sword. The great bulk veered off, then up. A moment later Kaulo ran out to him.

"It might have seized you!"

Sojarr laughed, triumphant because he had repulsed the monster.

"I saw a throbbing at the center, below the mouth. That means it has a heart there. Had it taken me, I would have stabbed it. The thing would make meat for all the tribe."

"But it would have carried you high into the air first. You would fall with it and be smashed."

That made Sojarr grow sober. Worrying about such a contingency, he remembered wide, round flowers that somehow floated gently to the ground. From a broad leaf, he stripped the tough outer skin, making a leathery green sheet much larger than a cloak. To the edges of this he fastened several cords and drew them together. Then he experimented by jumping from tree-branches and floating to the ground in imitation of the great flowers he had observed so closely. His parachute was larger, of course, for it had to support more weight, but it worked efficiently in the light gravitation of Titan.

Thenceforward he carried the device rolled up at his belt. Some of his friends were curious, others scornful. Sojarr said nothing. He anticipated the time when he might fight a ruak and need the parachute.

Days passed, enough to make two terrestrial years. On Earth, Sojarr would have celebrated his twentieth birthday. Huge and strong, he towered above all the following save Birok. Exercise and simple food kept him from learning what sickness might be. His broad-shouldered body and square-cut black hair made him stand out among the smaller, paler men of the following. Because his young beard was inevitably compared with the black face-hair of Truags, he scraped it away with the sharp edge of his dagger.

A good shot, a deadly hand with a spear, a fine swordsman and twice as strong as any of his fellows, he was the pattern of a warrior, yet he had never seen a battle. There was a good reason for this. In the disastrous clash with Hekta, Birok had lost too many men to risk more adventures. Therefore he slipped timidly away from all strangers except those who wanted to trade, and turned tail at the farthest sight of Truags.

This was not the way of Titan, where men considered mortal combat as the great goal and glory of their careers. As the younger faction grew up without bloodying their swords even in private duels—for Birok had forbidden such clashes to avoid weakening his following—they began to complain.

"You will do as I say," Birok would roar. "He who disobeys must meet me in combat."

Since he was a powerful man, with metal armor such as no other warrior had in the community, his challenge was not taken up.

THOUGH there was nothing but forest and travelway, there was change and novelty enough to keep the following from being bored as it wandered. The pattern and make-up of the vegetation changed. It was straighter and starker as they rolled north, more tangled and varied as they ranged near the equator. Birok sought to find new territories, far from Hekta.

One day the cars—there were seven now—came through sparse reedlike thickets to the shore of an ocean. It was densely grown and covered with soft, green water-plants for a great distance from shore, but Birok knew it at once for what it was.

"All out!" he commanded. "Women, dip water and dry it for salt. Men, capture sea-creatures."

There was a scramble for coarse nets and two-pointed spears. In fishing, Sojarr was again able to exceed and astound his fellows. They ranged

cautiously over the marshy stretches of water-growths that roofed the shallows with their broad leaves, prodding down to snare only a few wriggling quarries here and there. But Sojarr ventured out close to the edge of the natural raft. Then he dived in, quickly surprising and catching one after another of the fishlike creatures, to the applause of onlookers. Finally considering that he had done his share, he emerged and walked back to shore, then strolled up the roadway among the reedy thickets.

He went fully armed, as had become natural with him. Sword and dagger he carried in his belt, a two-pointed spear for a staff in his hand, and slung on a cord under one arm was a handgun. To buy that gun he had for weeks stood the guard duty of the previous lazy owner. But he did not seek to hunt or to fight. He wanted a moment alone in which to meditate, and even old Kaulo, his best friend, would disrupt his thoughts.

Tramping along the trail, out of sight of the following and its cars, he asked himself the silent questions that still bothered him.

Who was he? Some stray from a forgotten following, or a hybrid, as Birok sneeringly hinted? If either of these, why those dreamy memories of glittering landscapes, crowded skies and hordes of people, different from any upon Titan? Had it rather something to do with the Kai, the lordly race that had given this world its science and leadership? He wondered if he would ever know, or if the knowledge would give him comfort.

He was not happy. Despite his adoption, his companions of the following looked upon him queerly. Some of them feared his strength, would harm him if they dared. Birok, in particular, actually wished him ill. He mystified old Kaulo, despite the sage's love and sympathy. And to Sojarr, normally a kindly and honest soul, these differences and suspicions hurt.

"I will never know the truth," he said in his heart. "My sorrows are as dark as my hair and as strange."

Abstracted he skirted a bush that grew at a curve of the travelway. He almost walked into the midst of a throng of strangers. His heart forgot its bitterness and leaped into his mouth. Lightning-swift, he darted into a thicket of reeds and peeped cautiously out.

There was a train of cars, huge and numerous, with more than twice Birok's muster in number and weight. It moved at a crawl, the engine of the leading vehicle barely turning over. Ahead of it, on foot, moved an advance patrol of warriors with guns, swords, and spears.

They were Truags!

SOJARR had seen these creatures only fleetingly heretofore, and this closer and more deliberate inspection did not comfort him. The scouts were apparently all leaders, for they wore armor as good as Birok's with greaves on their shaggy shins and close-fitting arm-cases, as well as helmets upon their grotesque heads. Even so, they were abominably hairy and grotesque.

Their bodies were round and gross, with a circumference that his arms would have trouble spanning. Even with the curve in their jointed legs, they were taller than most of Sojarr's companions—as tall indeed as he himself or Birok.

Their four long, ungainly arms terminated in pincerlike claws instead of hands. Those sharp claws had the strength to tear down trees and the sensitivity to pick up tiny grains of sand. Their faces were not really faces but thatchy slabs, from the tussocks of which peered multiple eyes in wicked clusters, while the mouthholes were well hidden under bushy tufts.

Sojarr had not been seen by the ugly horrors. Their intent eyes were fixed upon the ground, reading the signs of wheels that had recently passed. Plainly they were advancing to an attack on Birok.

Almost opposite Sojarr's hiding place, the cars braked ponderously to a halt. A voice hailed the advance party, speaking the same tongue as Sojarr had learned from Kaulo, but

with a bestial throatiness.

A Truag sprang from the front platform—a giant even among his kind, the biggest creature Sojarr had ever seen. He towered a head higher than Birok, and the width and depth of his body made him seem squat. His mail gleamed not only upon his great globe of a torso but included a skirt that hung to his bowed knees and sleeves that reached to the elbow-joints of his arms. The iron cap had a comb above it and plates at either side that would protect his cranium from all points.

The coarse hair upon this monster's face was unusually long and thick, cascading forth like a human beard. To his belt were slung two swords. Plainly here was the master and champion of these horrors.

"Is the sea not very close to us?" he demanded in a grumbling boom.

"Within a short walk, Hekta," replied one of the scouts.

"Go then, and make sure that the weakling men are penned up. Do not let them see you, lest they prepare, but learn all you can about their position. Then return and we will plan our attack. Not one of them must escape."

So this was Hekta, who had been the dread of Birok's people ever since the day that Sojarr had joined them. The youth crouched in his concealment, listening and peering, his mind furiously turning over plans and inspirations.

The Truag scouts waved their weapons in salute and moved ahead at a brisk walk, five of them abreast. The giant Hekta strutted back, booming out more orders. A throng of nightmare warriors emerged from the stopped cars, all heavily armed and a number of them in metal armor. Obviously they were a rich and powerful following.

Hekta began to marshal them across the bare soil of the travelway, when a cry sounded from within the lead car. Two figures shot out upon the platform, struggling. The smaller and lighter of these tore from the grip of the other, springing to the ground.

It was a human being, a young woman! The other was a male Truag, clumsy and ugly-looking.

Sojarr floated to the ground (Chapter VIII)

THE captive tried to run, but Hekta cursed and leaped forward with amazing speed for so great a bulk. His claws fastened upon his prey within six paces of where Sojarr was hiding.

"I captured you last night," he growled hoarsely at her. "That makes you mine. Do you not understand?"

"I understand only that you are ugly and cruel," she hurled back at him.

Close at hand, Sojarr could see that she was a tall, lithe creature. She wore, not the brief tunic of the women he knew, but a warrior's cross-gartered sandals, kilt and leather armor. At her belt hung an empty sword sheath. She had been armed when captured. Without being hard or masculine, her face had a disdainful strength to its fine features, and her eyes glared fearlessly at the towering Truag who gripped her. A warrior maiden of spirit, decided Sojarr.

"Let me go back to my own following," she said in a voice that commanded and did not beg.

Hekta snarled. "By the black hand of Sohrn, whom Truags worship, had I not happened so soon on the trail of Birok, I would take time to humble you. That will come later. It is in my mind that a merging of the Truag and human races might bring greater strength and wisdom to the descendants of both."

"That shall never happen!" raged the warrior girl.

"Watch." Hekta grumbled out something like a laugh. "You will see fighting, and know I am worth having for a master."

Two hairy old females waddled out to bind the girl with fiber cords. Sojarr, almost within touch of them, yearned to interfere, but refrained. The fate of many depended upon him.

CHAPTER VII

Birok's Captive

KNOWING struggle was useless, the prisoner stood like a figure of frozen disdain. Her hair, disordered from her recent exertions, glowed as golden as the outer ring of Saturn overhead. Her cheeks showed two spots of angry red. Her eyes were as blue as the sheen of Sojarr's sword. Certainly she deserved better than Hekta as captor and mate.

A sudden decision electrified Sojarr. Noiselessly as thought, he slipped back through the reeds, moved away from the halted train, then regained the trail beyond the screening curve. The advance part of scouts was walking just ahead. He ran swiftly after it.

"Wait!" he called softly. "Wait, Truag sneaks and worshipers of filth. You are all dead things within the instant."

They turned around, curious but not frightened. After all, they were five to his one, all armored and seasoned battlers.

"Are you one of Birok's?" demanded the leader. "If so—"

With no further parley, Sojarr hurled his spear straight at the speaker. It took the monster off guard, driving straight into the scrawny, shaggy neck and stopping his last sentence forever in the middle. Before the Truag had crumpled, Sojarr had snatched up his hand-gun and discharged it at the biggest of the survivors. The tuvo exploded with an angry *whuff*. The ball went true to its mark.

Two of the scouts had fallen in as many seconds. And before the three remaining had even set themselves for defense, Sojarr was upon them with his drawn sword.

Three against one, and the one attacking! It was enough to puzzle the most alert scout. The three Truags fumbled for their swords, and one was stabbed in the paunch beneath his breast-plate while his weapon was not yet clear of its sheath. The other two fell on guard against Sojarr, hoarsely sneering at him.

They were armored and he was unprotected save for leather wrapping, yet almost at once he had them on the defensive, so strong and swift was his sword arm, so wicked his blade. He beat aside one slash, thrusting at the one who sped it and making him spring back. Then he whirled as the

other made a mighty downward cut. Up flew his own sword, and upon its tempered edge the iron of the enemy weapon broke off short.

Sojarr spun back toward the first Truag. A beat, a cut-over disengagement of blades, a long, gliding thrust, and the fellow was down in a splatter of blood.

The one he had disarmed lugged out a hand-gun, fired wildly and missed, then turned to run. A dozen paces would have carried this survivor around the bend of the road, into view and hailing distance of his kind. Even Sojarr's fleet foot could not overhaul him first. Desperately he hurled his sword like a javelin, and it drove between the unarmored shoulders of the fugitive. The creature fell, plowing the dust with the hair-tangle that served for a face. Sojarr, hurrying after, set sandal upon the corpse's back and wrenched his sword free.

Birok's following had worked peacefully the while, unaware of what threatened so close at hand. The women had boiled considerable brine, and were pouring the first batch of salt into the hoppers at the car-tails, which would spray the roads against encroaching vegetation.

Sojarr rushed into view. His drawn sword was covered with blood to the hilt.

"Truags!" he panted. "Under that leader you fear—Hekta! Arm, make ready. They are gathered—not many steps from here—hoping to destroy us all!"

HE described his adventures, and there was the blood on his sword to prove his story. Birok pulled his bushy beard with trembling fingers.

"Must I abandon my cars again?" he moaned.

Only Sojarr dared deny that this must be.

"Let us fight them! Hekta waits for his scouts to return, thinking then to plan his battle. If we are ready first—"

"Ready?" echoed Birok. "No more than twenty-five of us can fight, and he has thrice that many!"

"I will explain," interrupted Sojarr without much respect.

He drew Birok and Kaulo aside, explaining earnestly. Kaulo cried out in wondering approval, and Birok at length made a sign of glum assent.

"It is only that I see no other way than battle," he assured the young man. "Give orders in my name, and lead on."

At once Sojarr did so. He chose four youths, the fleetest after him in all the following. Kaulo he gave command over the older men, the women and the boys at the cars. The garrison would not be active or strong, but able to shoot and make a last-ditch defense. The rest of the men, about twenty seasoned fighters, moved away with Birok at their head to slip through the thickets and come out on the road behind Hekta's halted train.

Sojarr conducted his four racers to where lay the Truags he had killed. Quickly the corpses were stripped of their armor and weapons, and Sojarr's party quickly donned the breastplates and helmets. Each then loaded his hand-gun and laid it in the road, so the five pieces made a line straight across the way. The hand-guns of the dead scouts were also charged, and the five carried them at the ready as they resumed their swift, silent advance.

Beyond the bend of the road, Hekta became impatient.

"It is time you came!" he bellowed as five armored figures appeared. "What is the arrangement of Birok's following and how best can we cut him off?"

"Come and see for yourself," mocked a human voice.

Hekta saw that the five were not his Truags.

"After them!" he roared.

As if his words were a signal, the strange party whipped up its guns and fired. The bullets, at so short a range, ripped into the thick of the group, and five of Hekta's warriors fell at the same instant, dead or sorely wounded. The strangers wheeled even as their shots echoed, and ran for their lives along the way they had come.

With deep, throaty howls of wrath, the mass of grotesque warriors dashed in ungainly pursuit. They rounded the curve of the travelway, and the foremost of them howled with rage as

they saw the fallen forms of their scouts, slain and stripped.

But the retreating quintet had paused. Each man caught up a second gun. At the spoken word of their leader, they sent another volley at the pursuers. Five more Truags went down, and then the headlong run and the headlong chase again.

"Run them down!" Hekta raged at the forefront. "Shoot, strike! Look, there are the cars of Birok. These men come from there. We have the enemy between our fingers!"

But stolen armor and all, the five showed remarkably clean heels. They reached the cars full fifty paces ahead of the charging horde of Truags. And those cars had been drawn up broadside along the beach, with their windows facing the road.

The runners reached them, dived under the wheels. From the windows blasted a volley of hand-guns, which had been at dead rest across the sills, with the steadiest of the women and old men to discharge them. Again Truags fell, to flounder or lie limp.

OF Hekta's sixty-odd fighting males, twenty had been felled since the unlucky moment when he had halted his train to surprise and obliterate Birok. And not one of his enemies had been so much as scratched. But the giant leader of the assault had come for battle. His great voice thundered orders, stiffening the shaken morale of his surviving followers.

At his direction, fifteen warriors halted and opened fire with hand-guns. They did not kill any of the defenders, but forced them to quit their posts at the windows. Thus protected, some twenty-five shaggy brutes moved forward at a quick trot. For a brief moment it looked as though resistance were already over. The covering force, reloading, whooped its exultation.

That very whoop drowned the scamper of feet from behind. A frantic throng of Truag females and young ran in the direction of the train!

Birok's party, waiting until Hekta had led the pursuit of Sojarr's fleet soldiers, had fallen upon the unprotected cars. Some of the non-combatants had died before knowing that death was upon them. The others ran wildly, throwing their warriors into disorder a moment before Birok threw his own triumphant forces into the fight.

The Truags were bigger and stronger than men, but Truags attacked were less deadly than Truags attacking. Besides, this part of the horde held only empty guns for the moment, and Birok's men had swords. Half of the firing party was cut down before Hekta, in mid-rush upon the position of the train defenders, realized what was happening at his rear.

He saw at once that without his help the surviving females and children of his following would be wiped out. In a voice that made the trees quiver, he bellowed a command to wheel and charge back.

Meanwhile the sharpshooters under Kaulo in the defending train, without fire to keep their heads down, reappeared at the windows and fired a volley of their own. More Truags fell, and the rest were glad to run back to where they were less unprotected targets.

Lumbering and panting, Hekta came to the relief of his rear party. Now the Truags outnumbered the human gun-wielders, who could not fire into the furious throng lest they destroy their own forces. Victory might yet be grasped by Hekta's mighty pincer-claws.

But the cars had another contribution to make to this final phase of the battle. As Hekta's charge reversed, Sojarr and his four fleet runners again wriggled out from under the wheels that had given them sanctuary. Kaulo, forgetting his years and hatred for bloodshed, sprang down to join them. Six ready blades followed Hekta, falling upon him even as he reached the battle.

Sojarr, running ahead of his fellows, sabered two of the Truags. Leaping clear over the head of a third, he reached Hekta as that nightmarish giant sought to engage Birok in single combat. A sweep of Sojarr's blade dented the Truag leader's helmet and almost beat him to the ground.

Hekta turned just in time to parry a second cut, close to his neck. Suddenly he found himself fighting for his life against a strange, towering young foeman, black-haired and smooth-jowled, more dangerous than any human warrior he had ever dreamed of battling.

THE Truag leader held a sword in each of his upper claws, a short dagger in the third, and a hand-gun in the fourth. The gun he thrust almost against Sojarr's face, fired it. But a quick upward stroke with the iron guard of Sojarr's amazing sword knocked the muzzle aside. The bullet carried away only a flying lock from Sojarr's temple.

In the vicious, strong swordplay that instantly followed, Sojarr's blade moved swiftly and brilliantly enough to foil all three of Hekta's. For a moment it seemed as if the Truag leader was bested. Then one of his party, rushing up, struck a cowardly blow at Sojarr. Ducking low, the young man slipped and went down on one knee.

Hekta yelled loudly and sprang to finish this formidable adversary. Sojarr, still kneeling, had only a flashing moment of time, but it was enough. He struck upward. His edge smote Hekta's forearm, just at the base of the pincer-claw, severing it.

A wild howl rang out and Hekta staggered back. Dropping his other sword, he grasped the bleeding stump to check the gush of gore. He had had enough of fighting, and more than enough. He ran, and so did those of his following who still were able.

Harried by Sojarr, Birok and the other human warriors, the beaten Truags barely gained their cars. Frantically they crowded into the two that were farthest along the road. The last to scramble aboard severed the raw-hide couplings with a slash of his sword. A moment later, the badly wounded Hekta and the shattered remnant of his following were flying as fast as their two salvaged vehicles could carry them.

Sojarr and Kaulo urged that the other cars be put in action, pursuing and exterminating the adversary to the last Truag. But the victorious warriors now yearned for loot rather than blood, and Birok was loudest of these. The pursuit plan was abandoned.

A rich harvest of guns, swords and armor was gathered from the field, and in the cars were great bins of food and tuvo. The victory was not only inspiring but profitable. Only old Kaulo and thoughtful Sojarr mourned that five sturdy men had died of the following, for the loss of five men weakened the fighting force considerably. Meanwhile Birok, as was his right, entered the stalled car which had belonged to Hekta. [*Turn page*]

Private Notes from Mrs. M--'s Diary

1 Suffered all day with a terrible headache. Felt dull, tired and out of sorts. Remembered that I needed a laxative and decided my headache was due to that.

2 Took an Ex-Lax tablet before going to bed. It tasted swell — just like a piece of fine chocolate.

3 Slept like a top all night. Ex-Lax worked fine this morning and didn't upset me a bit. Headache's all gone now and I feel bright as a lark.

The action of Ex-Lax is thorough, yet *gentle!* No shock. No strain. No weakening after-effects. Just an easy, comfortable bowelmovement that brings blessed relief. Try Ex-Lax next time you need a laxative. It's good for *every* member of the family.

10¢ and 25¢

Those outside heard him yell in a new shrill note of triumph. He stuck out his bearded head.

"A fit reward, worthy of a leader!" he cried to his men.

He dragged into view his discovery —the tall warrior girl whom Sojarr had seen bound by the Truag women. She was still pinioned, still brave, still glaring.

"When last we fought Hekta, he shot down my wife," continued Birok. "It is fitting that in this new battle I find a woman more beautiful. I shall take her as my mate."

"You will do nothing of the sort," said Sojarr.

Without raging or threatening, he stepped up quietly below the huge leader on the platform of the car.

DEAD silence lingered for the time one might count the fingers of a hand. Birok broke it with an attempt to bluster.

"Do you dare question your leader's right to this captive?"

"Yes. It was not you who captured her. It was Hekta. Besides she may be of other use to the following as a whole. I see her in a warrior's garb." Sojarr appraised the young woman with his eyes. "It suggests that she is unusual and valuable to her own people. Girl, who are you?"

"Vara is my name," she replied in a voice as chill as waters in an underground cave. "My father is Brom, leader of a following twice the size of this. Since he has no sons, he reared me to fight and hunt and lead, hoping that I would command the following after him."

Half a dozen listeners laughed scornfully at the suggestion of a female leader, but Sojarr gestured commandingly for silence.

"How did you fall into the hands of the Truags?"

"I hunted alone near the place where my folk had made camp to repair an engine," she replied in the same tone of lofty reserve. "The Truags scouted near. Hekta himself, that big mountain of hairy filth, seized me. It was his thought"—she shuddered despite herself—"that a merging of Truags and human beings would produce a strong, wise race."

"Such as Sojarr," put in Birok, who had not taken his grip from the tied arm of the girl. "He is strong and fierce enough, but troublesome. Sojarr, you oppose me without authority. Cease talking. The woman is mine."

Sojarr smiled. "I have often heard you say that one who contests your word must fight with you. So be it."

His sword came out of its sheath. A shout went up, and Birok paled to the roots of his beard.

"Folk of my following," he grumbled, "will you permit this upstart invader of our hospitality to flout me?"

"His challenge is in order," said Kaulo stoutly.

Several others who loved duels shouted in support of this remark. Birok let go of Vara and scowled blackly.

"This is the day I dreaded," he muttered—and sprang!

CHAPTER VIII

Human Alliance

IT was a magnificent spring, and made utterly without warning. High from the platform of the car he launched his big body, drawing sword in mid-air. Before his feet struck the ground, he swung his blade. A swordsman less swift and practised than Sojarr would have perished before the combat was begun. But Sojarr whipped up his own weapon, parrying within a hand's-breath of his face. Next moment he and Birok were battling with a ringing clash and whip of metal, the onlookers howling and cheering with delight at the spectacle.

But it was over in half a dozen lightning-swift passes. Sojarr beat down a thrust of his opponent and flicked out his own point. The brawny wrist of Birok gushed blood. He dropped his hilt with an oath. A second later, Sojarr had set point to the leader's bearded throat.

"The girl is not yours," he said.

The jabber had died down. All

stared expectantly for the death-stroke. It did not come.

"Kill me," Birok bade his vanquisher. "I am unarmed. I will not beg for life. I can die like a leader."

"Kill you? Why?" Sojarr lowered his sword. "No, we want no more battle." He kicked away the fallen weapon for which Birok tried to stoop. "I have beaten you. I am leader."

"Leader?" repeated someone. "You, a stranger? Never."

A dozen others murmured agreement. Sojarr faced the grumblers angrily.

"Ruak! Ruak!" a woman suddenly yelled.

The warriors and women, so lately triumphant over the Truags, scuttled like so many insects to cover. But as once before, Sojarr did not run. He threw back his head, saw the ruak descend upon him like the great blanket of night. He stood his ground, drawing his sword. Long ago he had planned this move. He must prove his might on a fiercer enemy than Birok—fiercer even than Hekta. Otherwise his leadership would be rejected. And just now, he knew, he must be chief or nothing.

The fringe of tentacles whipped around him. He felt thorny claws bite into his flesh. A moment later he was jerked into the air. The ruak turned over and began to rise in the direction of the Sun, from which it gained power, absorbing rays into its darkside as it descended and converting them into energy to rise.

But this natural thermo-dynamic principle was not known to Sojarr, who was obsessed with another matter. He let the creature rise high with him, so the apprehensive yells of his comrades seemed to die away below. The tentacles dragged him close to the gaping mouth.

With a sudden whirl of his blade, he slashed himself free. He rose to his feet upon the almost-level expanse of flesh, located the throb of the heart and thrust with all his might. Kneeling, he drove his sword to the hilt. A sort of wail drifted from that hungry, open maw. Sojarr wrenched his weapon free, stabbed again and again. The flesh beneath him quivered. The thing was falling.

He thrust himself free of the thing. With a quick ripping motion, he freed his parachute of its lashings. A moment later he was dangling high in the sky, upheld by the spread of the parachute, while the great bulk of the conquered ruak plunged away beneath his feet.

He saw the outflung carpet of Titan's forest, and the cleft of the travelway. Dragging shrewdly on the cords to one side, he changed the direction of his slow fall so he descended majestically among the now abjectly admiring people of the following.

KAULO was first to speak. He caught at the folds of the parachute.

"This thing," he said excitedly. "What is it? Who made it?"

"I did," Sojarr told him. "Many have been curious about it. Now all know its value." He folded the thing quickly. "Warriors, the ruak I killed has fallen in the forest to that direction." He pointed with his sword. "Go, some of you. Make a path to it and cut up the meat."

His first order was obeyed with frantic haste. Sojarr addressed the following in a new, commanding voice.

"I am leader," he said, as once before.

"Yes," seconded Kaulo. "Sojarr is leader. No other can fight and plan as he does."

"Sojarr! Sojarr!" chorused the following. "He is our leader. Let Birok die!"

"No," stated Sojarr. "He shall not die. I have beaten him, but his death will only weaken us further. Birok is wise and brave and, after me, the best warrior among us. He shall live and help the following. I, who am leader, say it."

It was a radical change of custom, and only Sojarr's insistence made them accept it. Even Birok was glumly perplexed.

"My life is in your hands, and I will not beg for it," he growled again in bewilderment.

"Then I return it to you without your begging," rejoined Sojarr. Stoping, he picked up Birok's sword, which still lay where he had kicked it, and

handed it back hilt foremost. "Let us be friends and fellow-leaders. You and Kaulo are mature and seasoned in command. You two shall advise me, for I am young. And now to cut the cords that bind this girl Vara."

With a knife from the belt of a dead Truag, he freed her. She faced him with a fine show of disdainful courage.

"You will say, I suppose, that I belong to you!" she challenged.

"Not at all," demurred Sojarr, shaking his black head. "Your father—Brom is his name? He must set store by you. If we returned you to him, he would be grateful."

She looked at him with puzzled eyes.

"You mean that you will take me to him?"

"I will." He addressed his new followers. "Return, some of you, and bring up the cars that were ours. These larger and better cars of the Truags will carry us henceforth. Transfer all supplies and the women and children. Vara, can you lead us to where your father's following is encamped?"

She nodded, speechless.

Standing with Sojarr on the foremost platform of the moving train, she pointed out directions and landmarks, but she seemed strangely capable of hiding her joy at being returned to her own people. Sojarr was now clad in the mail and helmet of a leader, most becoming to his stalwart figure, and was intently getting used to them. Yet he found time to wonder once or twice in what way he had displeased Vara.

"Is it true," she asked once, "that you are of Truag blood? Birok said that."

"I know nothing of my parents, and neither does Birok," replied Sojarr.

"You are hard to please and very strange," said Vara thoughtfully. She tossed her golden head. "Many would welcome the chance to take me for a mate. Perhaps you think me ugly."

"No, not ugly. But you are bitter of tongue and proud of spirit, as women seldom are. Probably you would make a good leader of warriors, but a bad wife. Anyway, I am a new leader and I must learn my duties. Look, some cars are drawn up at the side of the road there. Are they your father's?"

A few moments later, the train had paused and Sojarr of Titan, alighting, was escorting Vara toward her own friends and family.

Brom, her father, was a sturdy man with snapping blue eyes like his daughter's. He embraced her joyfully and listened with amazement to the story of her capture and rescue. Then he addressed Sojarr.

"You are taking Vara for your mate?"

Sojarr shook his head. "I return her to you, for you wish to keep her and make a leader of her."

Once again the new idea took time to sink in.

"You seek some reward, Sojarr," Brom said with great caution. "What is it?"

"Friendship," replied the young leader.

"Be assured of that," said Brom promptly. "Indeed, if your small following would wish to join mine—"

"We do not," Sojarr told him. "We want to be free but friendly. Though we are small, we are mighty. We have beaten thrice our number of Truags and would make a good ally for any leader."

BROM pursed his bearded lips, and nodded agreement, then invited Sojarr and his sub-leaders to dinner. The alliance was discussed and approved on both sides. Meanwhile lesser individuals of the two followings traded together, much of the loot from the Truag cars changing hands. At the end, Sojarr and Brom touched each other's sword-hilts in the Titanian gesture of formal agreement.

"Let our two followings ride the travelways together, for there are food and water and tuvo enough for both in this world," said Brom. "We will be too strong for any save the biggest and fiercest horde of Truags to challenge. Indeed we might induce even other followings—small and weak ones—to join with us to make an even larger band."

"I was thinking that," nodded Sojarr.

The younger of the two leaders led the way next day, toward an inland point which he had not seen for days

"Get away, or I will kill you!" Sojarr warned (Chapter XI)

enough to make two Earth years. In his mind was a plan to make the alliance yet stronger.

Brom had come from his own train to ride the lookout platform with Sojarr, and as an attendant he had brought Vara. She was silent just now, more like a timid woman than her father cared to see. Her blue eyes constantly regarded Sojarr, and they neither smiled nor glared. But Sojarr, if he noticed her at all, made no more than formal recognition of her presence. He turned to Kaulo, who had appeared with some matter of business for his commander to decide.

"Do you know what way we travel?" he asked.

"Back toward the place where we found you," replied the gray counselor. "We have long feared these parts, for Hekta traveled here. Now he is gone, and we need avoid the place no longer."

Sojarr thought regretfully of how he had only maimed and not killed the big Truag leader.

"I have a wish to see again that deep valley where I lived alone as a child," he said.

"It contains much tuvo," observed Kaulo.

"And other things," Sojarr added enigmatically.

ONCE again he was not understandable to his companions. Had they not been nomads from the

earliest remembered times, they might have thought him homesick, which was not the case. Materialism, not sentiment, was turning him back to the valley of his childhood.

"We will remain near the valley for some time," he decreed.

Brom scratched his hairy jaw.

"I think I know the valley of which you speak," he offered. "But even if you have beaten one Truag horde, there will be others. That is a great Truag country. The valuable things you seek must be considerable."

"They are," declared Sojarr.

On the third day of their journey, they did come across Truags, who fled from the double train so well manned with warriors.

Later, when they stopped at a place where fresh water was to be drawn for their drinking-tanks and boilers, Kaulo stated that the valley was not far off.

At length they reached the point where once they had cut a road of retreat at Birok's order. The way was grown up with stems fully as large as those of the virgin jungle. But Sojarr set all the men to making the old trail again and even widening it, while women took salt from the hoppers at the car-tails and scattered it to keep the ground open. Finally Sojarr stood on the brink of the valley, with Brom, Kaulo and Vara beside him.

"Let the trains be prepared for a long stay," he directed. "Will you and a half-dozen good men chosen from both followings come down with me to the bottom of the valley?" He pointed to where, far beneath them, something gleamed dully. "That is our destination. When last we saw this place, Kaulo, the fear of Hekta kept you from exploring to see what this valley holds."

"One can dig out tuvo with a pointed stick," said Kaulo, studying the soil far beneath him.

"Tuvo is the least of all wonders. Follow."

Sojarr led them by remembered trails through the upper timbers, across meadows and around clumps and thickets, to the old wreck of the rocket ship. Kaulo and Brom gaped.

"By the bones of the Kai!" cried Brom. "It is iron! No, but some sort of metal—more than any man has ever seen before in one place! Ready smelted, too. Sojarr, this is wealth! It will make more weapons and helmets than we can count. Our tribe will rule the forests."

Kaulo tapped the hull with his knuckles.

"This is of the same substance that made that wondrous sword of yours, Sojarr," he said thoughtfully. "What is your will that we do?"

"Make more swords, guns, engines, armor," replied Sojarr. "Let the best of our smiths set to work. But chip metal only from the outside. The inside is—is sacred. Only I can enter."

"You exclude me?" asked Vara, a little hurt.

"Even you, for here is a mystery that only I know."

Sojarr tried the door. Its hinges still worked. He entered the long-deserted cabin, let the door close, and stretched in his old hammock. A flick of his fingers turned on the radio. Words came, which he could understand only in part.

"The latest news, as released from the capital of the Jovian Confederation," said an announcer. "John Kaiser, the distinguished astronautical engineer, will shortly bring to a completion his preparations for a voyage into space. Mr. Kaiser will probably attempt a safe landing on Titan, the largest moon of Saturn, where Pitt Rapidan perished so tragically eighteen years ago. . . ."

The words were too long and involved concepts Sojarr could not understand. He let them talk him into a light slumber, wherein he dreamed that he had joined all the human followings of his world into an alliance against a similar combination of Truags.

In his sleep his big brown hand moved toward his sword-hilt.

He was a warrior. To him there was no higher adventure than fighting the savage Truags, and no more final decider of all questions than his sharp, swift sword.

CHAPTER IX

The New Attempt

THE smallest and most remote of Jupiter's satellites, which since its discovery in 1914 by Nicholson had had no other designation than the numeral IX, was getting a name at last. Someone had leased it from the Jovian Government for the term of one Terrestrial year, and was acting as if he owned it. He had given the satellite his name—Kaiser.

The satellite Kaiser revolved some fifteen million miles from Jupiter, and was a rough, rocky globule about twelve miles in diameter. Its year and its day were the same length—seven hundred and fifty-five Earth days—so one face was forever turned from Jupiter. Upon this outward face, now at its farthest from the Sun, the lessor and christener of the satellite had been working hard and cunningly.

Since there was not enough gravity to record with anything but scientific gages, John Kaiser bolted a floor of iron plates to the rough granitelike rock of his little world. Workmen in space suits and magnetic boots could thus move at their jobs.

They were putting the final touches to a great sphere of aluminum-tinted metal, pierced with ports, hatches and rocket-muzzles, using the light of great radium flares in the gloom of airless, sunless space. If one looked into the heavens, it was as though the eye pierced to the outer limits of the star-crammed Universe.

The score of years that had passed since John Kaiser had spoken to old Howland of Pitt Rapidan's disastrous try at the Saturnian voyage had wrought few changes in Kaiser. He was still plump and shrewd in appearance. Few gray hairs salted his sandy locks. Few wrinkles bracketed his thin mouth and close-set eyes. He was more than ever sure of himself, certain of success. Within the clouded glassite of his space helmet, he grinned at the nearly complete hull of his ship.

"The best that ever fired a blast," he muttered proudly. "Took my last shred of money, but it's worth it. Within four months I'll be richer than any man in the whole System, barring the big static fortunes. Yes, it's worth the expense and the labor—worth the danger, too, if I recognized any danger. What can go wrong?"

Some observers and newscasters had been curious, even contemptuous of the round shape of Kaiser's rocket. It was quite practical, they admitted, for a take-off from its airless and almost gravityless construction base. But the landfall would be Titan, Saturn's only habitable moon. And how could the unwieldy sphere rise against a gravity that was full half of Earth's, with air resistance and low tank reserves. Where would he get fuel for the second take-off and landing? Where could he find the supplies needed for the crew and the engines?

Thinking of their arguments, Kaiser smiled more widely. He had an answer ready, in the form of his crew. The globe ship would not return—only Kaiser himself. Inside the hull was housed a torpedo-shaped craft, constructed by Kaiser himself. It was more than twice the size of most rocket life-boats, and seemed to have more than enough room for the twelve men of the crew in case of any emergency.

As a matter of fact, its cabin space was mostly engine room and fuel storage, with a cell-like compartment left for but one person. Kaiser himself intended to fly that little ship back to Jupiter alone. The others, according to agreement, would remain on Titan, form a colony in Kaiser's name, and develop it for him and his estate during the next twenty years.

"AND they were glad to make the deal," he thought, grinning. "Not one of them isn't in a jam. I've bailed them out of prison, bought them out of debt, just as Columbus did his men. I insisted only that they be good space-hands. And the twenty years out yonder will allow the statute of limitations to outlaw every single charge or bill against them. There's

room on Titan for them, and both they and I will profit."

He turned over in his mind the problem of what to name the first settlement. Kaiser? But this satellite was already named that. Well, then, Kaiserville.

He approached the craft, his magnetized space boots clanging on the iron plates. The working boss turned from a riveting gun and saluted.

"All set, sir," came his radioed voice to Kaiser's ear-phones.

"Ready for take-off, you mean? Everything checked?"

"Double-checked," was the reply. Then in a louder voice: "Cease work, all hands. Fall in at attention!"

The other eleven men of Kaiser's party rapidly formed in a single line. They were as silent and expressionless as robots in their hulking space armor. Again the mate saluted his superior.

"All ready, sir."

"Ship the men, Mr. Pelton," ordered Kaiser.

The crew marched to the main hatch-panel. One by one they entered through a closet-sized air-lock, and Kaiser himself went last. Inside the control chamber, the men were crawling out of their armor and helmets.

"Man the tubes," Pelton was bawling. "First watch police topside quarters. Hibbs, take television lookout. Yale, make the hatchway fast. Suffern, the controls—"

"Easy, Mr. Pelton," said Kaiser. "I'll take the controls myself."

He moved to the great keyboard, with its attendant charts, gages and other instruments. Quickly he checked everything.

"Air pressure, fourteen point six," he said aloud. "Gravity, point seven of Terrestrial. Rate of air loss, nil. Ready, all?"

"Ready!" called every man of the crew.

Kaiser struck a combination of keys on the board, with all fingers of both hands, as though he were playing an organ. Like an organ, the great round ship vibrated, its complicated mechanism answering a multitude of stimuli. With barely a jerk it freed itself from the light fastenings at its base and soared away from Satellite IX, now called Kaiser. Jupiter, cut from view for so long by the satellite's bulk, swam into view at a rear port-pane. Kaiser's eyes were fixed on the gage.

He brought rocket after rocket into play. They were going five miles a second—seven—ten. He turned the screw of an acceleration control. The vessel still hummed, as it would until it reached the speed designated on the dial.

"One thousand miles a second maximum," said Kaiser to Pelton. "I built her to reach that."

The mate nodded. He was a stocky little fellow with a perpetual grin and pop-eyes. Once he had been a crack pilot on the Spaceways Lines. He had gone to jail for insubordination, remaining until Kaiser procured his release.

"That's about tops in flight history," he said. "None too slow."

"None too fast," corrected Kaiser. "As it is, we'll take forty days to reach Saturn. I'm glad for the extra fifteen-million-mile start we got by leasing the satellite. With forty days to get back, I'll have no more than two weeks to spend on Titan."

"You figure you've thought of everything?" asked Pelton.

"Everything."

THE mate shrugged doubtfully. "I figure you know your stuff, sir. But—"

"Pelton," said Kaiser, "let me do all the worrying."

Pelton saluted again and departed to supervise the routine of the watch on duty.

Shortly afterward, a new figure entered the control room. It was Nissen, a space-hand as big as Kaiser and as pale blonde as a stalk of dead fodder. He had cost his employer a fortune. He was on trial for manslaughter, which some said should have been made into a charge of murder.

"Sir," he said, "I have Mr. Pelton's permission to speak for the hands."

"Well?" Kaiser prompted.

"It's about our being given this chance, sir. You taking us to Titan and leaving us there, away from all the

charges and troubles we had on the inner planets and so on. We feel as if it's a new chance on a new world."

Kaiser's smile grew broad but not soft. A practical man, he wanted no one to be under misapprehensions as to his kindness of heart.

"I'm glad you feel optimistic, Nissen, but I'm being a humanitarian for a very good reason. Twelve can go out in a ship that can carry supplies to send one back. Do you see? I couldn't pick a crew that had to get home again."

"Anyway, sir, all us men are grateful."

Nissen saluted and left. Kaiser, turning back to his controls, pondered long. If he were in the habit of counting chickens before they were hatched, he would consider Titan as good as reached and claimed, with all its rewards. It was pleasing to be thanked so warmly by his men but in truth he considered them nothing but helpers. In fact, he cared for no living person in the Universe save himself and his niece.

He wondered how Ursula was now. That finishing school had reported her good at studies, popular with her classmates, difficult to discipline. What a girl! She was beautiful in an almost frightening way, with red hair and green eyes and a strong young body. He would have to take her with him, but only Pitt Rapidan had been foolish enough to take a loved one to Titan with him. Kaiser would see her soon enough, anyhow. The money and fame he was winning would make a princess out of her—

"Captain Kaiser!" shouted someone from the sleeping quarters aft.

He locked the control combination.

"Yes?" he called back.

"Stowaway, sir!"

Kaiser cursed. His expedition was so accurately planned that to have such an emergency might make all the difference between success and failure. What idiot, romantic or greedy or crazed, had stolen a ride? Kaiser was grimly prepared to have the unknown fool thrown into space.

"Bring him to me!" he snapped.

"It's not a him, sir. It's a—"

"Hello, Uncle John!" cried a clear, familiar voice that made his heart dive down into a cold well.

Ursula Kaiser ran up to her uncle and guardian, a little rumpled but no whit abashed.

"School bored me, darling. Nothing but dull books and duller boys. So I came by short-shot rocket last night, hid while your men weren't looking. I'm going to Saturn with you! Isn't that wonderful?"

"Yes," he said unhappily.

CHAPTER X

Landfall

PONDEROUSLY, but without mishap, the great globe-form ship came to rest at last. It came to rest upon the green-grown soil of Titan, where no other craft in history had ever struck without utter disaster. As at the beginning of the voyage, so at the end the controls were in the hands of the commander.

"Everybody to stations!" ordered Kaiser, eyes on his gages. "Prepare to cut brake-blasts. Cut them!" There was a little thump as the ship settled in. "Stand clear of the hatch. Mr. Hibbs, make a test of the atmosphere. We have to be sure, you know."

"I've already made the test, sir," replied Hibbs, the plump chemist, from his corner of the control chamber. "Lighter pressure than on Earth—about ten pounds and a quarter—but the oxygen content is a third by volume, which balances nicely. Other gaseous constituents are nitrogen, carbon dioxide, with a few negligible traces of other vapors. It's breathable, all right."

"Shall I open up, sir?" asked one of the space-hands at the lock.

"You shall not," replied Kaiser. "I'll be the first one out. Let nobody venture into the open until you hear me strike the hull three times as a signal."

It was his right to land first as commander of the expedition. But his niece, Ursula, came from the direction of the cabins. Her lovely green eyes

were full of concern and anxiety.

"What if something happens, Uncle John? Perhaps there is danger of some sort."

"I'll depend on you to defend me, dear." He smiled. "Go to the port next the hatch, be ready to throw it open and blast away with an electro-automatic. Is everybody set? Here goes."

He entered the narrow lock-chamber, closed the inner panel behind him, and unfastened the outer hatch. Stepping down, he stood at last upon the soil of Titan. His first lungful of Titanian air was bracing. He sighed in ecstasy and stared about him.

Twenty years before, disaster had hurled Pitt Rapidan's luckless ship to the bottom of Titan's largest valley. Policy had guided Kaiser there, for it seemed to him that all the rest of the satellite's surface was either grown high in vegetation or swamped in oceans.

The ship was lodged in a neat little cup or pit dug by its own rocket-blasts, not more than thirty or forty paces from a clear blue lake. Luxuriant lawn-like vegetation, tufted here and there with rich green bushes and joining on the higher slopes with some sort of forest, stretched on all sides.

Kaiser, studying this vegetation, had a feeling that it was something he had seen before. Along with the sense of familiarity went a sense of being small in proportion. Kaiser, so important to himself, did not like it. He would have to get the expedition's botanist, Suffern, to work. Remembering those who waited anxiously inside, he struck ringingly with his knuckles on the hatchway. Scrambles and commotion came from within. A figure sprang out and to his side. Ursula's beautiful green eyes danced with a light of almost greedy joy.

"Wonderful!" she exulted. "Uncle John, you've done it. Wait until we get back home. While you're lecturing and accepting decorations, I'll make every society girl take a back seat."

"Right," her uncle agreed, trying not to sound doleful.

In his heart he kicked himself. Everything he had planned seemed so practical, so foolproof. He had arranged to meet and provide for every emergency, except this wilful and beloved niece, for whom there would be no space in his cramped little return ship.

"What's that shiny thing on the other side of the lake?" Ursula rushed on eagerly. "It looks like a—like a space ship!"

KAISER turned in the direction she indicated. He pursed his thin lips and whistled softly.

"I have a hunch," he said slowly. "We promised to look into the fate of the Rapidan expedition." He raised his voice. "Tumble out, you others. Pelton, fire the rocket signal for 'success'—three red blasts. I want you, Suffern. You, too, Hibbs."

The chubby chemist appeared with his kit already slung from his shoulder. Kaiser ordered him to test the lake-waters at once. Suffern stooped and gathered blades of the sward.

"Remarkable!" he exploded at once.

"What's remarkable?" asked Kaiser, though he had an inkling.

Suffern straightened again. He was a gaunt, hunched scientist, so wrapped up in his career that he had fallen into debt. Kaiser had gained possession of him by lending him more money than he could ever hope to repay. His big hand held forth the fronds he had picked. They were fleshy and fringed.

"Not grass, Kaiser—moss!" he cried. "Moss, but bigger than anything of its type on Earth. Reduce its size and it would be like the moss you see around fish-pools and under cedar trees anywhere in Earth's temperate zone. And those" — his other hand gestured toward the more distant clumps of bushes—"are other types of moss and fern, or I'm at the foot of my class in elementary science. What looks like yellow and dun fruit must be the spores. Giant moss of Terrestrial type on a moon of Saturn!"

Now Kaiser knew whence had come that sense of personal smallness. The vegetation was an oversized species of what he knew on Earth. His close-set eyes skimmed the distant upper belts of forest on the horizon. Even so far away, he could see the stems were

smooth, the leaves immense, big enough for carpets or tents.

"If what you say is true," he observed, "you'll be saying next that those trees are really shrubs or weeds grown out of all proportion, eh?"

Suffern looked, too, and for Ursula's sake refrained from swearing.

"That's exactly what I'll say next!" he almost screamed. "Look, Kaiser. See the form of those big plants yonder? They're weeds and ground plants, and some of them are even *domesticated* forms! I spot a geranium, or something like it. But why? Why?"

He made a move as if to dash away to make sure. Kaiser clutched his shoulder to restrain him.

"You'll have twenty years to study everything, Suffern. Wait. Get your instrument case. I'm forming a patrol for our first walk on Titan."

Pelton he placed in charge of the party at the ship, with pudgy young Hibbs to try chemical tests on certain strange fruits picked from the big moss-bushes. Suffern was to go with him, and little Clymer, the geologist. Kaiser armed himself from the gun room of his craft, with an electro-automatic rifle, two pistols and an MS-ray thrower. Three of the space-hands were also armed. Ursula refused to be left behind, and her uncle included her as the seventh member of the party.

"Let's walk around the lake to see what that shiny lump is," he said.

THEY did not make speed, for both the botanist and the geologist were prone to pause at every step to seize and comment upon some new discovery. Suffern gathered some of the immense spores of the moss, arguing that their protein-rich flesh would be a valuable source of nourishment to the colony. Clymer tinkered with a bit of clay-covered rock, and howled. When it broke open, his fingers were scorched.

"There's some heat-producing element on this world," he announced. "Perhaps—"

He broke off, gingerly putting some specimens into a tube from his case.

At length they rounded the lake, and came toward the wreck of Rapidan's ship. It was Kaiser, shrewd in the ways and makes of spacecraft, who first observed that it was not shattered except at the forward part, which had been driven far into the ground. Segments had been broken from the exposed hull. Indeed it seemed as though they had been cut away. Disturbing thoughts came to his mind. Surely Pitt Rapidan could never have survived such an impact as this ship must have suffered twenty years ago.

Ursula, despite her uncle's stern instructions, got ahead of the group and walked lightly around the ship. As she passed out of sight, she gasped audibly. A moment later she backed swiftly into view.

"Uncle John!" she said in a voice that she tried desperately to make steady. "Uncle John, come and see what I've found back here!"

What Ursula Kaiser had suddenly confronted was a tall, dark figure with powerful bare arms, a tunic of scale armor, an iron helmet with a comb, a

[*Turn page*]

sword, dagger and hand-gun slung to his belt. She stared at Sojarr, leader of the allied followings who called themselves the Swords of Sojarr.

It was three years since he had made the alliance with Brom, and two since Brom had died in a hunting accident. Vara had become titular head of her father's people, but his dying wish had been that she leave all matters of government and leadership to Sojarr. Vara had done so, in her silent and rather gloomy way, assuring Sojarr that she did only because of her father's injunction, not because she deferred to him.

After that, the leader of another following tried to steal her, and Sojarr had been forced to kill him in a brief and one-sided duel. The leaderless folk of that luckless woman-thief attached themselves to the alliance, and others followed.

Now Sojarr, at the age of twenty-three Earth years, ruled many hundreds of persons and no less than five trains. They kept roughly to the same territory, a quarter that had at its center Sojarr's boyhood valley. He taught them to signal to each other with horns and gongs, to leave notched sticks at cross-trails for warnings or messages, and to meet on set occasions for councils and decisions that amounted almost to a national government.

Five sub-leaders acted under him. Kaulo governed the old following of Birok. Vara commanded where her father had wielded power, and solid men named Yanek, Kruh and Gorta led the other three trains. Birok himself had drifted away after another quarrel with Sojarr, whose rule he had never been able to endure. He had not been greatly missed, though it was said that a few old friends sometimes stole into the forest to talk with him.

Sojarr had made better weapons and tools for his people, from the hull of the old ship that no one knew had brought him to Titan. Not only the chiefs, but most of the principal warriors, now went in helmet and shirt of mail. There was no people on Titan like the Swords of Sojarr for number, might or prosperity.

But Sojarr was not exactly happy. He still felt apart from his followers. This very brilliance and ingenuity in leadership and mechanics strengthened that thought. Once or twice he thought of marrying, but all the girls feared him, save Vara, and she was unpleasant, with her ironical teasings. At times his heart was as black as his shaggy mane of hair.

OFTEN he would stroll alone to his ship and listen to the speaking machine on the wall. He had been listening to it even now, when the noise of Kaiser's descending amazed him and brought him out to look. And so Ursula Kaiser came face to face with him.

She was as strange in his sight as he in hers. A tall girl, almost as tall as Vara, she was fully as proud of features and bearing. But her hair was of a strange red, like a smoldering fire of tuvo, and cut even shorter than a warrior wore his. Not only her torso, but her arms and legs were covered in snug, stout fabric of brown, and there was much metal upon her, white and yellow. In a shiny belt at her waist rode strange weapons, the likes of which Sojarr had never seen.

"Girl, are you here for peace or war?" he asked her in the language of Titan.

She shook her head slowly, as if trying to decide whether or not she understood him. Then she spoke over her shoulder in a tongue strange to that world, but familiar to Sojarr. It was the language he had partially relearned from the radio.

"Uncle John, it's—it's a young man! He looks like a gladiator, or a Greek hero!"

"You speak the tongue of the box inside this place," said Sojarr in English, quite slowly but distinctly. Ursula's head spun back, her green eyes widening in amazement. "I know of nobody in this world besides myself who can do that. Are you from heaven? Are you the Kai?"

Ursula could not reply.

John Kaiser now came into view, flanked by his subordinates with rifles ready. He almost reeled when he saw Sojarr.

"Pitt Rapidan, you survived after all!" he cried in a voice that could not hide its savage disappointment.

CHAPTER XI

The Flower of Death

FOR once in his calculating and ordered life, John Kaiser was amazed beyond reason. The tall, dark warrior before him was instantly recognizable as the rival of twenty years ago, and Kaiser's whole reaction was one of murderous despair. If Pitt Rapidan had survived, after all, the award would be his.

"Don't you know me?" asked Kaiser. "I'd know you anywhere, even in those clothes. We used to meet at poor old Howland's. He's dead now. I'm John Kaiser."

"Kai—Kai—" Sojarr tried to form the name. "You are of the Kai, from up there?"

He pointed skyward.

"Of course we're from up there," contributed Ursula. "We came here on a visit to you. You know you're about the most marvelous physical specimen I ever saw."

Her green eyes admired him frankly.

"I am Sojarr," announced the young man. "And you are of the Kai. Is that great, round thing over there your flying car?"

"Yes," replied Kaiser, scowling. "One like this."

He had been studying his interrogator, and saw what his mistake had been. This mail-clad stalwart was almost the carbon copy of Pitt Rapidan, but of Pitt Rapidan a score of years ago. Shocked with amazement, Kaiser had not thought how Pitt Rapidan would have aged. His nimble mind had had time now to complete the rationalization. This was the son of his rival, the lad named Stuart Rapidan.

"Who are you?" he demanded of Sojarr. "What are your people, and who was your father?"

Sojarr had to wait, fitting the words into that brain-groove where he kept his gleaning from the radio. And he, too, was disturbed in his heart. These folk said they were the Kai, but he had always imagined a finer, grander race of supermen. Here, instead, were people like his own, dressed differently and not particularly handsome or imposing. The leader was as tall as himself, but unhealthily plump, and some of the others had stupid, unpleasant faces. Only the flame-haired girl was really admirable.

"I have many people, men and women, up there." He jerked his helmeted head toward the upper rim of the valley. "But I grew up alone here, near this place. I do not know, do not remember my father—" He broke off, ancient baby memories stirring. "It was so long ago."

Kaiser laid his hand on the plating of the wreck.

"Did you fly here in this?"

Sojarr shook his head. "I cannot be sure."

The practical wheels were whirling in the back of Kaiser's head. If this were Stuart Rapidan, he must have forgotten everything about the voyage from Earth. The "people" he spoke of would be some sort of natives of this strange sphere. Perhaps the award was not out of Kaiser's hands, after all. He went to the hatchway of the wreck and tried it.

"Do not go in there," said Sojarr at once. "It is my place. Only I go in."

"It's all right," replied Kaiser shortly. He drew the hatchway open. The first thing he saw inside was the wreckage, and some scattered bones in a corner. Pitt Rapidan had died. Who else could have left a skeleton at the point where the controls had once been? To deal with this simple savage would be easy.

But Sojarr's great sword sang as he whipped it from its sheath.

"Get away, or I will kill you!" he roared.

AS the sword flashed on high, Suffern drew a weapon on his own account. His snap shot with it was good, or lucky, for it snapped Sojarr's flourished blade at the mid-point. The young warrior sprang back and hurled the hilt at Suffern. A moment later, the men of Kaiser's party had drawn together, each with a weapon in his hand. Sojarr snarled at them.

"You Kai are mighty, but I am leader here," he said.

From his belt he whipped both handgun and dagger. He would have attacked them all, but for Ursula. She sprang between him and the others.

"Get back!" she cried. "Do you want them to kill you?"

Sojarr, who had no notion of how to fight women, retreated half a dozen spaces. Two electro-automatic bullets sang past his ear, and he turned and plunged into a thicket of ferny bushes.

"You will all be sorry!" his voice promised balefully.

Kaiser, emerging from the wreck, would have fired in the direction of that voice, but Ursula caught the hand that lifted the rifle.

"Don't!" she begged. "I know he's only a savage, but what a handsome savage! He needs only to be understood. Uncle John, do you think he's the son of Pitt Rapidan?"

"I don't see how he can be," lied Kaiser. Then, to the others: "I want you to disregard my niece's whims. If you see that big killer again, get a pellet into him. He means trouble."

He set two of the space-hands for guards, opened the hatchway again and entered the wreck.

His main examination was concerned with the bones. They were disarranged and distinctive only in being bigger than common. But on a fingerbone of the right hand was a tarnished circlet. Kaiser picked it up. It was a Service ring, the signet of a Terrestrial space officer. Inside were the initials "P. R."

"That settles the fate of Pitt Rapidan," he muttered as he slid the ring into his pocket. "But he left a son, an heir to that prize money, who is also full of murderous dislike for me. How am I going to handle that situation? He speaks English somehow, but he doesn't look or act as though he would listen to reason."

Kaiser sighed and emerged. Closing the hatchway, he fused it shut with a ray thrower.

"We'll return for a more thorough investigation," he said. "Form up and keep your weapons ready. We're heading back. If that fellow who calls himself Sojarr appears—"

"Let me handle him," Ursula finished the sentence.

Her handsome features set in a cunning expression, as though she were a beast of prey contemplating a victim.

"Uncle John, don't kill him unless he really threatens you," she pleaded. "After all, he had every right to think we were enemies butting into his affairs, using strange weapons. I think I might make him see the light."

"Probably you could, at that." Kaiser smiled. "All right, men, don't shoot Mr. Sojarr unless he really attacks."

But Sojarr did not show himself again, though as the party skirted the lake, they heard stealthy rustling in the thickets. Suffern, turning in alarm toward the sounds, instead pointed out more and more specimens of giant moss and lichen.

"We're like live dolls in a moss-garden!" he cried excitedly.

BACK at the ship, Kaiser beckoned to Clymer.

"Let me have those mineral specimens you gathered. The heat producing things."

Little Clymer brought the corked glass tube from his case, but did not hand it over at once.

"I wanted to test them," he demurred.

"There's plenty more of the stuff around, and I want Hibbs to take a look at it," insisted Kaiser, holding out his hand.

Clymer yielded up his findings. With a jerk of his head, Kaiser summoned Hibbs to the little inner cabin where was set up a laboratory bench, racks for instruments and vials, and containers full of chemicals.

While Kaiser watched, Hibbs conducted one experiment after another. The mineral was hard to work with, for it was constantly blazing up, even exploding when any sizable piece was tampered with. But Hibbs was patient and wise. He made many notes of his observations, and finally spoke weightily.

"First of all, it's a brand-new element."

"I was thinking that, and so was Clymer," nodded Kaiser. "But you've

established the fact. It should be named after you—Hibbsite."

The plump chemist grinned with pleasure.

"Thank you, sir. But won't Clymer be jealous? He found it."

"Anybody could pick it up. You're the discoverer from the exact scientific standpoint. I'll back you in that. What else is there about it? For one thing, it burns on exposure to air."

Hibbs consulted his notes.

"More than that, sir. Far more than that. An exposure to oxygen makes a fire so hot that—"

"Then what?"

"I'm not prepared to say definitely. We have here only a sort of ore. The element isn't pure. It has inert substances mixed in. But I venture to predict that if the stuff was refined to any considerable degree, it would have a tremendous reaction. Its atoms would explode—"

"You're exactly right," Kaiser cut him off. "You know what that means?"

Hibbs nodded eagerly. "The stuff—Hibbsite, you said you'd name it after me—would be the most powerful explosive in scientific knowledge. There's fame in it. Immortality!"

"And money and power," rejoined Kaiser. He gazed at the crumbled mineral he had named Hibbsite, isolated now under a glass bell from which the air had been exhausted. "The greatest rocket fuel, the most deadly weapon that anyone ever dreamed of."

"There's something else," Hibbs added. "It can furnish fuel to take back the big ship. You wondered how Miss Ursula was going to return home. And I'll come, too."

Kaiser looked up.

"You don't want to stay here on Titan? What about that jam back on Mars."

"Nothing that money can't fix," replied Hibbs. "I'll realize a pretty big share of the profits, won't I, because of my scientific analysis? I'll clear up my troubles, build a laboratory—"

"In fact, several of the company would probably like to return," hazarded Kaiser.

"And they could. Remember, sir, that while the Goddard Foundation prize goes to you as commander, our contract says that we, as members of the expedition, can share in the profits taken from the new world we land on. I suppose Clymer and Suffern will be glad to return and report. Pelton, too. Nissen won't. His charge is criminal, and very grave."

KAISER pursed his thin lips as he stared at the chemical.

"Do you think," he pursued, "that this fuel stuff could bring our ship back again soon?"

"Of course," cried Hibbs. "No reason to wait for a conjunction. Fixed right, it would fly us all the way to Pluto!" He got to his feet. For all his flesh he was a small-boned, alert fellow, with merry eyes and a bald head. He beamed with delight. "Let's call the others in and tell them, sir."

Kaiser also rose.

"Tell nobody," he stated flatly.

"Why, Boss! If I discovered it—"

"Tell nobody until you've made more conclusive experiments to establish yourself as its discoverer. As you say, Clymer will be jealous, and the others may try some dangerous meddlings. This is between you and me." Kaiser gathered up the notes Hibbs had made, put them into his side pocket. "Come along. We're going to look for more of the stuff."

"All right. I understand."

Hibbs recognized the reason for keeping the secret.

Beyond the nearby thickets they strode, deep in conversation. They were gone for some hours, until both the Sun and Saturn crept close to the horizon.

Pelton grew worried.

"We'd better look for the boss," he announced. "Volunteers!"

Four of the space-hands came forward, as well as Suffern, the botanist, who was placed in charge of the patrol. Ursula, wilful as ever, insisted on accompanying the men.

Quickly Suffern picked up the trail, and for once neglected botanical enthusiasm to track down the missing men. The searchers formed an open-order line and marched for a good three miles, calling at the top of their

voices. At length they were answered, and from among some reedy stalks like incredibly tall grass emerged Kaiser. His hands were full of strange, leafy specimens.

"You'll have to tell me about these things, Suffern," he greeted the head of the party. "I'm not as good a botanist as you, but I can see that everything is an enlarged modification of Earth forms. I'm shopping around for an explanation."

"Uncle John, you idiot!" cried Ursula with affectionate rudeness. "Have you been pottering around here by yourself? We were worried sick about you."

"Where's Hibbs, sir?" asked Suffern.

"We separated to see if we couldn't gather more specimens," replied Kaiser. "We agreed to meet back by a big spreading plant downhill. It has thick leaves the size of carpets, like a sort of thousandfold-enlarged green lily. I was on my way back now."

"I know the plant you mean," declared Suffern, "but it doesn't suggest a lily to me. Let's all go back."

They retraced their steps, chattering pleasant scientific shop. Within a twenty-minute walk from the ship, they came to where a vine issued from a clumpy thicket of shrubs, bearing at its end a cluster of leaves like a monstrous blossom.

"Hello," said Kaiser interestedly. "It was spread out when we came by. It's bunched up now, like a bud."

"It was bunched up when we passed it on the way up," volunteered one of the space-hands.

URSULA had moved ahead of the party. Approaching the huge growth, she suddenly drew back.

"I don't like it," she said tremulously. "There's a kind of musky smell. I think something's been caught and shut up inside those leaves."

They gathered around the closed clump of leaves, which had folded up as tightly as an immense green fist. For no discernible reason, they all had fallen sober.

"It quivers," pointed out Suffern. "It has sensations, responds to the stimulus of our nearness."

"Cut the stem," directed Kaiser, and one of the space-hands chopped away with a machete. "Now then, let's get hold of these leaves and peel them back and see what it's got inside."

"No!" screamed Ursula. "Let go of the leaves!"

In the midst of a sticky mass of sap lay the lifeless and blood-drained body of Hibbs, the chemist.

CHAPTER XII

The Two Armed Camps

SOJARR held council on the lip of the valley, where his combined followings maintained a clearing for the corralled trains. The great bare patch in the forest had been hewn out with enormous labor. Though constantly sown with salt to inhibit the vegetation, it was well hidden by high stems all around and a roof of broad leaves and laced vines above. A tuvo fire gave radiance in the Sunless, Saturnless dark of Titanian night.

On wooden stools sat the council. Sojarr presided, with Kaulo and Vara sitting at his right and his left. Yanek, Kruh and Gorta, his newer subordinates, ranged their stools together before him. The voting was five to one against the plan under discussion, for Sojarr, dark of hair and enigmatic of character, was once more making a suggestion that marked him for a heretical outlander.

"Sojarr, you have been a son and comfort to me," old Kaulo was saying, "but I fear you are not being wise this time. These newcomers are surely the Kai. Indeed they told you so. And men cannot fight against the Kai. Only other Kai can do so."

"Agreed," said Yanek deeply. "I will fight Truags at ten to one, if Sojarr orders. There is chance for victory at such odds. But against the Kai? No. They cannot be slain."

"They can be slain," said Sojarr stubbornly. "I know."

"How do you know?" demanded Gorta.

"If they are Kai, I am Kai also," Sojarr continued. "Do not gape at me like fools. You think it strange that I have black hair. I saw black hair on three of those who met and attacked me. Their tongue is one I have learned, and the leader among them spoke as if he knew me, asking if I did not remember certain things from my babyhood." He paused, frowning. For a moment he did remember, but the memory was fleeting. "It is in my mind, anyway, that they and I are of one race, though I do not like them or their works."

"Kai may fight against Kai," pronounced Kaulo. "We ordinary men are too weak for that. Go you, Sojarr, and fight against your people. You could not live against the strange weapons of which you tell."

"Unless that woman with the flame-colored hair protects you," Vara added in a voice that was as acrid as green fruit. "You have spoken much of her, Sojarr. I would like to fight her. She is too bold with strangers."

Sojarr smiled faintly. For all her sarcasms, Vara often acted possessively toward him. Perhaps, when the present emergency of these disturbing invaders was past, he would pay more attention to the proud and lovely warrior maid.

"Come with me, then, Vara," he said. "We shall scout the camp of the Kai. Stay here, you others. If we do not come back, leave here, for our cunning and our strength will have been shown as nothing. But I do not expect too much from these invaders. I say again that I know they can be killed."

The others looked shocked at Sojarr's blunt impiety. They gave no farewell as their commander, with Vara beside him, strode off toward the valley.

ANOTHER council was being held at the bottom of the valley, around a big portable radium flare. Here, too, it was of leaders—John Kaiser, the mate Pelton, the botanist Suffern, the geologist Clymer. Four of the eight space-hands, Xavier, Dode, Smith and Nissen, stood guard at points well away from the ship, where they could watch and listen for anyone approaching. The other four, Yale, Gower, Metz and Borden, were off duty in their quarters. But it was doubtful that they slept.

Ursula Kaiser sat at the open hatchway of the craft. She tried unsuccessfully to keep her eyes from the blanket that covered a still figure a dozen feet away.

"The plant itself is only a variation, a departure from Earth forms," Suffern declared solemnly. "Conditions here make it larger and more deadly than the types we know, but we have the Venus fly-trap and the pitcher plant at home. Tough, sensitive leaves to imprison a prey, active juices to digest."

"Not so loud, Suffern," growled Pelton. "Miss Ursula can hear you, and it's not pleasant."

He, too, glanced at the blanket-covered form and shuddered.

"The crew is nervous," contributed Clymer. "One or two are pretty superstitious. They said that bad luck and disaster was bound to come when the company was organized for thirteen men."

"But my niece stowed away and made us fourteen," pointed out Kaiser. "Tell the fools that."

"I did. And they came back to say that with Hibbs gone, there were thirteen again. Accepting their premise. the argument is logical."

"We'll bury him tomorrow," Kaiser informed them. "We'll have a service. I'll read it from the prayer-book. But no volleys. We'll need our ammunition, or I'm no judge."

"You mean—"

"I mean the big, black-haired fellow we saw today. He promised us that we'd be sorry."

As if in punctuation of the commander's gloomy prediction, an electro-automatic rifle spat nastily in the night air. Then the voice of one of the guards warned loudly:

"Stand by, all! There's something —somebody in these bushes!"

"Take over here, Pelton," snapped Kaiser, jumping to his feet. "Get Miss Ursula inside. Prepare for a rush, or anything else unexpected. Come on, Suffern, Clymer. It sounded like Smith."

He caught up the flare, which lighted the scene for many yards around, and ran swiftly. The lesser gravity obviated his middle-aged bulk. Quickly he reached the place where the sound of the shot and call had originated.

Smith, the sentry, stood with his rifle at his shoulder. He was a compact, brown-bearded man, a ready adventurer like that other Smith who fourteen hundred years previously had founded a fort called Jamestown and made a reality of a colony called Virginia. Opposite him stood someone with a beard fully as brown, but clad in scale armor and steel cap. A stranger and a native of Titan, nevertheless he plainly recognized the rifle as a weapon to respect.

"He wouldn't halt when I challenged," said Smith to the approaching officers. "I fired over his head, and he saw I meant business. What is he, sir? One of the Titanians?"

"He's like the specimen we saw earlier," replied Kaiser.

Holding up his flare so it struck lights from the stranger's mail, he walked close. Suffern and Clymer, pistols drawn, moved up to either side of the intruder.

"Come," ordered Kaiser.

HE made a peremptory beckoning motion with his free hand. Silently and sullenly the armored man obeyed. Smith remained on guard, a little nervous, though somewhat triumphant after his adventure.

Kaiser led the man into the ship. Ursula came forward to look at the captive.

"I suppose you speak English, like your friend who wants to kill me," Kaiser began. "Who are you and why are you prowling around us?"

The bearded, helmeted head shook, and the reply was in another language.

"It sounds like Greek," said Pelton, who had joined the party.

"My name is Birok," said the prisoner in his own tongue. "I was once a leader, but Sojarr deposed me. I have no love for him, and I have come to help you Kai."

"I recognized two words," put in a space-hand. "He said 'Sojarr.' That's the name of the big fellow we saw by the wreck. And he said 'Kai.' That's what Sojarr called us, asking if we came from heaven."

"I understood a little more than that," added Clymer. "He uses something like Greek, though a corrupt and archaic form."

"Impossible!" Kaiser said. "How can a native of this satellite, where nobody from the inner planets ever came before, possibly use Greek derivatives?"

"How can the vegetation be an enlarged and modified Earth flora?" flung back Clymer. "Anyway, I'm going to try the fellow." He framed simple words in Greek. "Are you a friend or an enemy?"

"Friend," replied Birok.

The scientists, all of whom had learned considerable Greek in the course of their studies, understood. Convinced, Kaiser nodded bewilderedly.

"We are willing to be friends, too," he pronounced slowly and clearly. "One of your people, the man you call Sojarr, is an enemy. Do you come from him?"

Birok seemed to understand this quickly enough.

"I hate Sojarr," he said harshly. "If you kill him, I will be leader again. I will help you. Where do you strangers come from?"

"From the sky, where there are other worlds," Kaiser told him. "My name is John Kaiser."

Birok was even more impressed than Sojarr had been.

"Kai! You are of the Kai, the owners and rulers of all?"

He dropped on one knee in token of worshipful humility.

"We're getting somewhere," Kaiser told the others in English. "This man hates Sojarr, and he thinks we're some kind of gods, of the race of the Kai, whatever that is. No reason to argue with him, at that."

He put forth his hand and ordered Birok to rise. They continued to talk, understanding each other better as time went on.

Birok's tale of Sojarr, though colored with strong personal dislike, was fairly accurate.

John Kaiser listened with deep interest to the ex-leader's account of how a solitary boy was found by the following, taught manners and speech and useful arts. Then the boy became a powerful and ambitious man, wresting from him, Birok, the rule of the following.

Birok was forced by clashing of wills to leave the growing community.

Now a solitary renegade, he had always prowled close to his former people, hoping for a chance at revenge and return to power.

"I was near when he first met with you," he finished. "I saw that he was making himself your enemy. I want your help. You want mine."

"This is luck," Kaiser said in English. "A disgruntled leader will be invaluable, in case of more unpleasantness with Sojarr."

A decision was reached among the explorers on the spot, and Kaiser communicated it to Birok.

"We think you have been unjustly used. We will help you, and any friends you may have, to gain back your former power."

Birok's eyes glowed hopefully.

"Help me to do that and to win a certain woman, Vara, and I shall be your slave forever."

Kaiser gave him his hand on it, and ordered that he be given quarters in Hibbs' old berth.

"This is real progress," Kaiser told Pelton as Birok was led away. "We need native auxiliaries. Cortez had them, Caesar had them, every successful conqueror had them."

"You're going to be a conqueror?" suggested Pelton.

Kaiser smiled his thin smile. "It looks as if I'll have to be, doesn't it? If I don't conquer Sojarr, I'll be conquered. I daresay it will be no fun being conquered by Sojarr."

CHAPTER XIII

Conflict with the Kai

AT dawn, the closely guarded Birok pricked up his ears to listen to certain furtive calls, like the whistle of a bird. With Kaiser's permission, he made reply. Then he was marched out by Kaiser and an armed space-hand to a thicket at some distance from the grounded ship.

There two warriors showed themselves. They were his friends and spies in Sojarr's camp. They spoke slowly and simply, so that Kaiser could understand their talk. They told of the council of leaders, of Sojarr's scouting around the explorers' position, and of that insistent young war lord's orders for a move in force against the strangers.

"He will not call it war unless the Kai strike first," finished the man who reported. "He hopes rather to impress the Kai, who are few, with his strength, and then promise friendship and help. What shall we do, Birok?"

It was Kaiser who made answer for the deposed leader.

"Go back and say nothing, but keep to the rear of the march against us. You will both be glad later that you are Birok's friends."

The two parties separated. The spies drifted back toward Sojarr's clearing, Kaiser and Birok returning to the ship.

"Unless the Kai strike first," Kaiser slowly repeated the words of the report. "We shall strike first, Birok! Make no doubt of that. Yes, and we shall strike last, too."

Birok studied his companion. Kaiser was big but soft-looking, without much of the fighting man in his appearance.

"You are doubtless very wise, and have good weapons," said Birok. "But if Sojarr comes within sword-reach of you—"

"Let me attend to that," Kaiser bade sharply.

Among his own men once more, he laid plans for the coming encounter. Those plans were simple. He opened four of the ship's view-ports and placed at each of these a space-hand with a ray thrower and an electro-automatic rifle. The remainder of the party he marshaled, all heavily armed, at the closed hatch-panel, where they could make a quick sortie.

"There are twelve of us, not counting Birok," he said confidently.

"Miles Standish had only twelve men with match-locks, and he whipped whole nations of Indians. These Titanians aren't much higher in the development of warfare than Indians."

"There are thirteen of us," corrected the voice of Ursula. She joined the group at the door, a pistol at her belt and a rifle in her hands. Her green eyes sparkled with excitement. "If there's to be any shooting, I'm going to help. But I won't shoot at Sojarr!"

Kaiser wheeled upon his niece, caught her shoulder in a stern grasp and snatched the rifle away. Then he marched her toward the inner chambers of the ship. Surprised, she let herself be hurried along. At the door to her little cabin, no larger than a closet, she recovered herself and wriggled free. She faced her uncle in surprised protest.

"Why the manhandling?" she demanded.

He roughly snatched out her pistol.

"Ursula," he said, "this is going to be a battle. You stay out of it."

"But—"

"Stay out of it, I say! I'm responsible for you, as commander of this expedition and as your guardian. I won't have you hurt or killed. That's why I'm locking you in your cabin." He pulled open the door and thrust her inside. She pounded angrily at the panel, but Kaiser switched on the outer lock and set the time for six hours.

"It ought to be pretty well over by then," he muttered grimly.

Inside, Ursula's cheeks glowed redder than her hair. Her green eyes grew narrow with rage as they roamed fiercely about the little compartment. Suddenly they took on a new light of triumph.

On a peg hung her holsters. In one of them was a ray thrower, powered with MS-beams, strong enough to cut through metal far thicker than the bulkheads of her prison.

WHATEVER the dissenting spirit of his followers, Sojarr formed them. When they fell in to march, there was no rebellion nor even a murmur. He had disciplined them well for battle and for obedience. Fully three hundred warriors, armed with sword, spear and hand-gun, stood in ranks at his command.

"Divide in three parties," he decreed. "Kaulo, take command of the first. Yanek, you will lead the second. I myself will direct the third."

The two sub-leaders designated came to salute.

"What then?" asked Kaulo.

"The first party will move around the rim of the valley, and down toward that great flying ball which the Kai ride in as in a car." He drew a map on the ground with his sword-point. "The second party will go in the opposite direction, and will also descend. Kaulo, this is your point of descent. This, Yanek, is yours. I will approach from this third direction. Thus we will close in upon the Kai from all sides."

"Sojarr, for the last time—" began Yanek.

Sojarr stared the rest of the sentence to death before it was spoken.

"Keep to cover, letting nobody see you," he went on tersely. "Our scouts say that they have drawn in their sentinels, lying in their ball like seeds in a husk. Perhaps they know of our coming and would fly away. If so, it is well. We did not invite them here."

He paused, meditating. The council might be right. Perhaps it would be better if the mighty Kai were left alone. But they held his valley, where he had so long probed after the secret of his origin. And many against one, they had threatened him. His only course was to threaten them in turn. Even so few of the Kai must see that he was too strong.

As soon as he and the Kai understood each other, there could be mutual respect, perhaps an actual alliance. He knew the Kai were not devils or spirits, but men like himself—more like himself, in fact, than the warriors he ruled.

"We will be prepared to defend ourselves," he said "but I do not think there will be need. Let all begin the descent, each at his place, when the Sun is at the height of the sky. That is all."

The three forces moved away.

The advance was achieved under

cover of the thick vegetation, and the thickets kept the three groups invisible until far down the slopes of the valley.

As the afternoon wore on, Sojarr's best scouts sneaked and crept among the bush-clumps. They brought back reports of silence on the part of the Kai, and establishing communication with the various main bodies.

Lying hidden, the three hundred warriors made an evening meal of provisions they had brought along. Then by the dubious light of Saturn at half-phase, they continued their advance.

The night's bivouac was ordered almost within charging distance of the round ship, which showed lights at its windows but no movement or sign of watchfulness. Sojarr carefully ordered his forces so that they made a little ring of patrols, six to eight men in each.

"IF we are going to attack, let us do so while the Kai do not know of us," urged Yanek, who had begun to feel the thrill of before-battle preparations.

"Who knows that they do not know of us?" asked Kaulo. "The Kai are wiser than any man we know."

"And who has said we have come to fight?" elaborated Sojarr. "This is but my show of force. I do not admire the Kai particularly, although the woman with them is very handsome. But I would rather have them as friends than as enemies. If there is a battle, it will be begun by them."

He continued his preparations all night. At early dawn he gave a great shout, echoed by his sub-leaders along the line. His men stood up from hiding, faced inward toward the lair of the Kai.

Fine, ready-looking, bearded, most of them wore helmets and armor. The Swords of Sojarr were surely the finest aggregation of fighting creatures to be seen upon that world. The young leader's heart swelled within him as he gazed along the curve of the patrol line, saw strong hands draw swords, lift spears or poise hand-guns. Surely these would do him credit in the presence of the strangers.

"Stand fast!" he thundered. "I go by myself to speak to the Kai."

He strode forward to the ship. Before he had made a dozen steps, however, he was hurled a challenge in the language of the speaking machine.

"We see you, Sojarr. We see your men, and they don't frighten us. Are you looking for trouble with the all-powerful Kai?"

In the open port-hole opposite him was the sudden glitter of a weapon being lifted. Sojarr saw, comprehended, and flung himself flat in a tussock of fleshy stems. He heard the hissing snap of an electro-automatic. The pellet tore the air above him with a wicked, whining sound. The Kai had begun the fight.

"Charge!" yelled Sojarr, springing up again.

He knew there would be a volley from the ship, but he expected no more than one. His training had been with single-shot hand-guns. He had never dreamed of a repeating firearm. One outpouring of shots, he thought, and the guns of the strangers would be left empty. Then his men would come to grips with these soft Kai, would teach them better manners and who had the true right in this valley.

But the volley was not a volley. It was a torrent.

Guns poked forth at every opening of the ship and fired without ceasing. Sojarr felt a burning slash upon his cheek. Another bullet struck the top of his helmet, carrying it away and knocking him down as though he had been struck with a club. His charging men swept over and past him, but even as they rushed howling to close quarters, they seemed to melt away. Those ever-speaking, inexhaustible guns of the Kai were slaying them in swaths!

Sojarr rose shakily. He was not badly hurt, for the bullet that had pierced his helmet had not really touched him, and the other was only a graze. He caught up his fallen sword and charged after his men.

They had gained the very sides of the round fortress, but there were not many left of them. Some were firing into the open ports with their hand-guns, and were being fairly hurled away by other fusillades from within.

As Sojarr rushed quickly up to them, a small glistening blob came flying out of the nearest port. On impulse he dropped flat again. The bomb exploded above him, its shock almost ripping the armor from his body, but doing no actual harm to him. He lay still for a moment, and those who still lived gazed in terror.

"Sojarr is dead!" cried one.

"Sojarr is dead! Run!"

They ran. Two of the fugitives stopped to pick up their fallen leader. Badly stunned by the two shocks, he did not move at once.

"Sojarr is dead! Run from the Kai!"

The whole throng was in full flight on the moment.

The defending force laughed derisively. A trap-door flew open at the top of the round shell, and something leaped out.

It was Kaiser's huge life-boat, under full power—a cartridge-shaped craft of gray metal, fitted with a ray thrower. Rising, then swooping, it flashed its death-dealing beam over the thickest concentration of the demoralized warriors. They could not escape.

The two who carried Sojarr dropped him and were scorched to cinders in mid-flight twenty paces away. Luck alone, and the whim of the life-boat's operator, enabled some of the war party to reach shelter. Of the ship's crew, not one was so much as wounded.

Where timber shaded a far-off slope, the survivors gathered. Less than a hundred had returned, a scant third of the original force. Yanek was dead. So were Kruh and Gorta. Kaulo, sick at heart, took command.

"Sojarr has died?" he asked in dread.

"No," growled a warrior with a bloody face. "I see him coming yonder. Better for him, perhaps, had he perished down there with the others."

CHAPTER XIV

Flight of Ursula Kaiser

LIKE many men before him, John Kaiser refused to detect in a relative traits that were his own. A schemer, a proud flouter of influence and pressure, he had always hated restraint and discipline. The worst possible attitude for him to take toward Ursula was one of arbitrary command.

As soon as the doorway of her cabin was closed upon her, she was quite ready to die herself, or to kill others, for the pure purpose of defiant escape. The sight of the ray thrower — a sovereign oxidizer and cutter of the toughest metal—was all she needed. Seizing the device, she directed it against the thin floor-plates of the cabin.

A circular twist of her wrist, and she had cut away a circle of the metal like a manhole cover. Below was darkness. She recognized an engine hold, with the gravity balance machine softly purring away to maintain the ship's interior at Earth-pull.

Ursula paused only to draw on a stout leather jacket over her silk blouse, and to fill its pockets with concentrated food tablets. Over the jacket she buckled her belt, which bore in its compartments a compass, telescope, chronometer, and kit of chemicals. Then she slid carefully down into the hold.

It was cool and gloomy there, and she took her bearings. To the right of her would be the reserve armory compartment. Gingerly, lest she explode the store of munitions, she cut herself a way and entered.

From the racks she took two electro-automatic pistols, clipping their holsters to her belt, and then selected a rifle. This part of the ship was well underground, nesting in the cavity blasted by the brake-rockets, and to one side was a port which would open below ground. Throwing back the glassite pane, Ursula turned the force of the ray against the soil.

It was not particularly surprising that no great quantity of tuvo was present for her to set off and blow Kaiser's ship high in the air, as on a rocket blast. Titanians and Truags had to search for the isolated deposits the way men on Earth and other planets sought deposits of metal ores.

She made an adequate tunnel and crept into it on hands and knees. Her

ray opened a corridor ahead as she crawled. Eventually she found herself crawling under matted roots and knew she was beneath a thicket. With the ray turned to partial strength, she cautiously broke a way through the crust and came out in the heart of a clump of fleshy shrubs that bore yellow clusters of fruit.

Suffern, she remembered, had said that this was giant moss and that the fruity spores would be edible. She tried one, and found the flesh pungent but fairly satisfactory. Pulling several fronds to the side, she peeped out at the ship. Nobody was in sight.

"Uncle John will try to discipline me," she thought, amused. "He'll send my meals by panel-waiter and not communicate with me till evening. Then he'll come to pull the heavy-guardian act. But by then I'll be far from here."

She was neither cramped nor bored in her hiding place, for there was too much to be interested in. The moon of Saturn was utterly different from what she had grown up to know, but it also had strange similarities. Again she remembered that Suffern believed all Titanian vegetation was merely enlarged Terrestrial growths.

"These bushes are magnified moss," she decided. "I'm like an elf hiding here. Those broad-leafed thickets are ferns. And on the top of the slope is a forest of grass, barley and reeds, the size of redwoods. What a world to grow up in! Thank heaven, I won't grow in proportion, though Sojarr wasn't exactly undersized."

Ursula spent a lot of her time thinking about Sojarr. As a schoolgirl at home, she had enjoyed and been flattered by constant admiring attention from young men. Now all those swains seemed pallid and puny, compared with the stalwart warrior whose trail she had crossed. She wondered how he would look in form-fitting sports garments, such as were fashionable now on Earth and the Jovian moons. A space officer's tunic and shiny boots would certainly become him. How her classmates would stare and whisper and burn with envy to see her upon Sojarr's magnificent right arm as they entered a ballroom or banquet hall!

"Uncle John feels awful about Sojarr. If he's really Stuart Rapidan, then he has prior claim to all those tons of money the Foundation is offering to the first successful traveler to this system. And there's the talk about Sojarr wanting to attack us. I wonder if he will, and I wonder if I ought to let it make any difference. If Sojarr were brought back to civilization with all that money, little Ursula could help him have a good time with it. Not a bad idea."

For all her glitter and gaiety, Ursula was as practical as John Kaiser himself. With the tip of one pistol-holster, she wrote her name in the soft mold on which she sat.

URSULA KAISER

Then she crossed it out, and wrote:

MRS. STUART RAPIDAN

"Hmmmm," she crooned to herself.

At sundown, she crept out of her hiding place and struck out for the

[*Turn page*]

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rim of the valley. She refrained from noisy trampling and moved at a crouch. Her thought was to foil any search for her from the ship, but it was another possible encounter that she missed by this stealth. She almost ran into another night creeper not many thickets away, and dropped flat behind a big-leafed vine just in time.

Saturn was rising, and in its light she could see a half-naked, bearded man with a drawn sword. He was peering at the ship. Then he moved forward out of sight and gave her a chance to retreat. Probably one of Sojarr's friends, decided Ursula, anxious for a look at the strangers. In case of battle, her uncle could easily defeat a thousand such innocent barbarians. She didn't care about them, but she hoped Sojarr would escape.

"Knock the nonsense out of that chap, and he might be worth my taking trouble over," she decided.

She had a brief vision of herself winning Sojarr's everlasting gratitude and worship by interceding with John Kaiser.

But she had to hide again, to avoid more creeping scouts and spies. Naturally they were looking for sentries, who would be stationary and erect, in positions of defense. Perhaps they heard Ursula's rustlings and thought her one of themselves. But she was at pains to keep out of their way, striking well up the slope and beyond the areas patrolled by these observers.

At length she reached the point where the forest began. She might have encountered one or another of the curious and frightening animals that dwelt there, had they not been frightened away hours ago by Sojarr's advance. She did hear the noise of many human beings, and crept to where she could see.

BY the light of a small fire, Sojarr sat and talked to subordinates. He gave orders crisply and confidently. Ursula, whose ancient Greek was quite as good as that of anybody in the exploring company, understood most of what he said.

There was not to be an attack if it could be avoided, only a show of armed force to bring about a fair understanding, on honorable terms, with the strangers. Let the men with armor hold the forefront of the positions, and all keep their weapons ready. Finally Sojarr, having made his dispositions, moved on downhill after the main body of his warriors.

He was even more handsome than Ursula had remembered. and more self-assured. Watching him depart by Saturn light, the young woman felt a little worry for him. His hopes of any truce with her uncle would be sadly shattered. He might be shattered himself. But that was still less pleasant to contemplate.

"Ursula Kaiser," she admonished herself, "you're getting sentimental without waiting for old age. Take it easy. You can't rescue the man. Lie low and hope he's wounded and captured. Then you can civilize him. After that there'll be plenty of time to think about romance."

She gained a vantage point on the rim of the valley, with thick jungle behind her. There she waited for the dawn, and witnessed from afar the valiant, foolish and useless charge of Sojarr's three hundred against John Kaiser's dozen. From that useless charge the remaining warriors broke and ran, and she saw them. She saw, too, the rise and swoop of the armed life-boat, picking off the wretched fugitives with its ray. She did not approve.

"Why can't Uncle John be satisfied with licking them well, and then making peace? Sojarr never wanted any more than that, even when he thought he could win. Now he'd be delighted with any kind of human treatment. I don't understand why Uncle John's being so bloodthirsty. . . . Is Sojarr safe?"

Shortly afterward, she got an answer to her question. Near her hiding place gathered a knot of melancholy survivors. An old, gray-bearded man was taking charge. The others, panting and gloomy, listened to him.

"Sojarr died?" asked the old one.

"No," replied one of the others, loudly enough for Ursula to hear. "I see him coming yonder. Better, perhaps, had he perished down there with the others."

And Sojarr joined the group, stag-

gering a little and bleeding all along one jowl. The graybeard addressed him.

"It is my duty, Sojarr, to remind you that this battle was none of your following's choice."

The young leader lifted a hand that shook with weariness and pain, to forestall any other reproach.

"You are right to speak so, Kaulo. These are indeed the Kai, born of heaven and too powerful for us. I was wrong to try matching wits or strength with them. The blood of all who have died is resting heavy upon my soul."

HE sat dejectedly upon the fallen stem of a great corky plant, holding his swimming, aching head between his hands. The biggest of the warriors spoke.

"It is in my mind that the followings should have another leader. If I challenge—"

"Wait," interrupted the older one, whom Sojarr had called Kaulo. "Many of our best are dead. Shall we throw out a wise and brave leader, because he has made one mistake? Nor is it a brave man's way to challenge one who is sick and wounded."

Ursula thought that well said. She thought, too, that it was high time for her to enter the affair as an active force.

"Uncle John will be frantic, because of my disappearance," she pondered. "He'll think these barbarians have managed to kidnap me. But once Sojarr refused to hurt me. I'll be safe if I show myself now, offer to go as peacemaker."

She would have moved into view, but just then she felt herself grasped in powerful arms. One of them locked around her waist, the other across her shoulders, with a hard skin that was nothing like a palm clamping across her mouth to prevent outcry. Unable to struggle or to turn, Ursula stared at those prisoning arms.

They were black, shaggy, jointed. They were not the arms of a human being!

Even as she realized this, she was lifted lightly from her feet and borne away into the depths of the unknown forest.

CHAPTER XV

Deposition of a Chief

IN the stronghold of the defending explorers, there was no victorious joy. John Kaiser looked at his gathered subordinates, his face pale.

"That damned Sojarr has been badly whipped, but he's in a position to deal me a lot of misery," he said.

There was no need for him to say it. None of his companions had ever seen their chief so upset and wretched. Pelton, who had come back from reconnoitering the tunnel Ursula had dug, attempted to offer a comfort.

"Sojarr and his Indians ran mighty fast and furious," he reminded. "Probably they didn't even cross Miss Ursula's trail."

Kaiser shook his head. "If she had been able to come back at all, she'd have done so by now. After all, she got away well before the battle. We know that. Two days have passed. Sojarr's got her, all right, and heaven knows what's happening to her. Where's that idiot Birok? What do his spies say?"

They fetched their captive-ally, who had been conferring with stealthy spies in the near thickets.

"Sojarr is alive, master," he reported to Kaiser. "He was wounded only slightly, and when you saw him fall it was but shock. His men rally around him, but there is much dissention. A bold challenge would find him fairly unsupported. He would have to fight, and if a man conquered him, the following would pass from his leadership."

"And my niece?" prompted Kaiser.

Birok shrugged. "The flame-haired girl has not been seen at Sojarr's camp, nor have my friends heard any talk of her."

Kaiser was not reassured. His features grew cruel and cold.

"Sojarr is hiding her somewhere. He's cunning. He'll hold her for a trump card to play against me. Birok, you're going to help me. You want to rule your people again?"

Birok snarled his burning eagerness

for that opportunity.

"Very good. You will go to the Sojarr's camp and challenge him."

The snarl vanished comically.

"That will not serve, master," he protested. "Sojarr is the greatest swordsman in this world, and with swords must the challenge be offered. I would be like a child against him."

"The power of the Kai will strengthen you. Do not look so blank. Give me that sword you wear."

Kaiser took the weapon to the laboratory. He called Pelton and one of the space-hands to help him. Quickly they unshipped the blade from the hilt.

In place of the hilt they welded on a piece of metal pipe, six inches long and one inch in diameter. In this hollow cylinder Kaiser fitted a powerful little storage battery, connecting it solidly with the tang of the iron blade. Then the three wrapped the pipe with heavy insulating rubber, making a hand-grip. The cross-hilt was also insulated, and the base of the blade itself for six inches. The switch-stud of the battery projected beneath the new hilt like a pommel.

When the weapon's modification was complete, Kaiser tested it with the battery turned on, evoking a crackle of sparks from metal bulkheads, door-jambs and tools. Finally he sought out Birok again.

"You feel that you are a better swordsman than I?" he asked.

BIROK made a humble gesture of self-effacement.

"It is not lawful for me, a mere warrior, to consider myself above one of the mighty Kai."

"I give you permission to speak the truth," said Kaiser, testing the balance of his electrified sword.

Birok grinned. "It is a simple matter. Without giving offense, may I point out that men of my race wear and use swords constantly? You Kai seem unfamiliar with such weapons—"

"Enough. Let us fence."

A sword that had been picked up from among the dead was given Birok. Confidently he fell on guard against Kaiser. The others of the expedition watched curiously and a little impatiently. Dueling seemed like foolish play for their employer to practise when his niece was lost and in danger.

Birok advanced his point skillfully, probing for an opening. Kaiser no more than touched Birok's blade with his. There were sparks like little flashes of lightning, a wild yell of surprised pain from Birok. He danced back, dropping his weapon and wringing his nerveless fingers. Kaiser smiled, lowering his own point.

"The hurt will pass away," he promised. "But were you not stricken helpless? Could I not have stabbed your heart or cut off your head?"

"Great is the wisdom of the Kai," quavered Birok, rubbing his arm.

"With such power in your own sword, would you not be willing to face Sojarr?" pursued Kaiser.

"Sojarr, or a dozen like him."

"Then pay attention. I have changed your sword according to the great knowledge of the Kai. A great power of tingling fire is now shut up within it. If you press this round knob so, the power is shut off or released, as you wish. Put the sword into your sheath. We go to win your leadership back from the usurper."

They went, eight of the twelve, with Birok. Kaiser dressed his men in helmets and mail shirts stripped from the dead warriors that ringed the ship, counting on such protection to turn back a volley of pellets from handguns. He carried a portable radio, pocket-size, to communicate with the ship.

The party marched for a full day up the valley slope. At the top Birok found a pathway, then lifted his voice in a great shout. He was answered in his own tongue. Boldly the nine men went in the direction of that cry.

They came into the clearing where Sojarr's following held its station. Kaiser, at the head, saw a great area of light from the sinking Sun, almost blinding by contrast with the surrounding walls of forest. He saw, too, the parked lines of wooden cars, the groups of somber people, the warriors starting up with quick apprehension.

At a word from Kaiser, the men of the expedition deployed with rifles raised. The motion and presentation of those terrible death-dealing fire-

arms gave the badly beaten Swords of Sojarr pause. Sojarr alone strode forward, towering and swarthy, scowling.

"Is it not enough that you have killed most of us when we wanted only honorable peace?" he demanded bitterly of Kaiser. "Why have you come to fill this world with sorrow?"

Kaiser made no reply. He only motioned to Birok, who stepped forward sneering to confront Sojarr.

"I bring you a challenge," taunted Birok. "We fought once for the leadership. You spared my life. Now I demand to fight again."

"Fight Birok!" cried many voices.

Since Sojarr's defeat, the man he had exiled had gained partisans. Sojarr smiled bitterly. Already these warriors of his were remembering that their leader was an alien. They were turning to Birok, long ago proved a failure but still one of themselves.

"So be it, Birok," he granted. "Draw your sword and attack when ready."

He bared his own blade with a rasping jerk that had energy but no particular enthusiasm in it.

Birok's tawny beard jutted forward in advance of triumph. His big thumb pressed the switch-panel, charging his blade with electric current. As Sojarr fell on guard, his rival faced him.

Sojarr gasped, quivered all over and retreated a step. Only by a great effort did he cling to his hilt. Even when contact was broken, he felt a sickening quiver through every shred of his being. What had happened?

"It is the power of the Kai, my friend," Birok jeered.

Again he engaged blades. Sparks flew, and this time Sojarr could not keep his outraged fingers tight upon the vibrating hilt. The sword flew from his hand, bouncing point over pommel a dozen paces away. There was laughter from Kaiser's men, cheers for Birok from many of the spectators. Sojarr retreated again. He had worn no other weapon than his sword, not even a dagger.

"Your life is in my hands," taunted Birok, advancing to the kill.

But Sojarr had spied, in the forefront of the watchers, an old woman leaning on a stout wooden staff. The staff was tough and straight, roughly the length of a sword. He made a side-leap, snatched the stick and fell on guard with it. Loud laughed Birok and touched the stick, intending to make it fly from his enemy's grasp as he had done with the sword.

But Sojarr applied quick pressure in turn, forcing Birok's blade aside and striking at his face with the end of the staff. It was Birok's turn to retreat, amazed. Sojarr followed him up, eyes dancing with hard lights, the club striking viciously. His Earth-born strength and agility more than made up for the difference in armament. A blow on the helmet almost knocked Birok to his knees.

"Help, master!" the renegade cried

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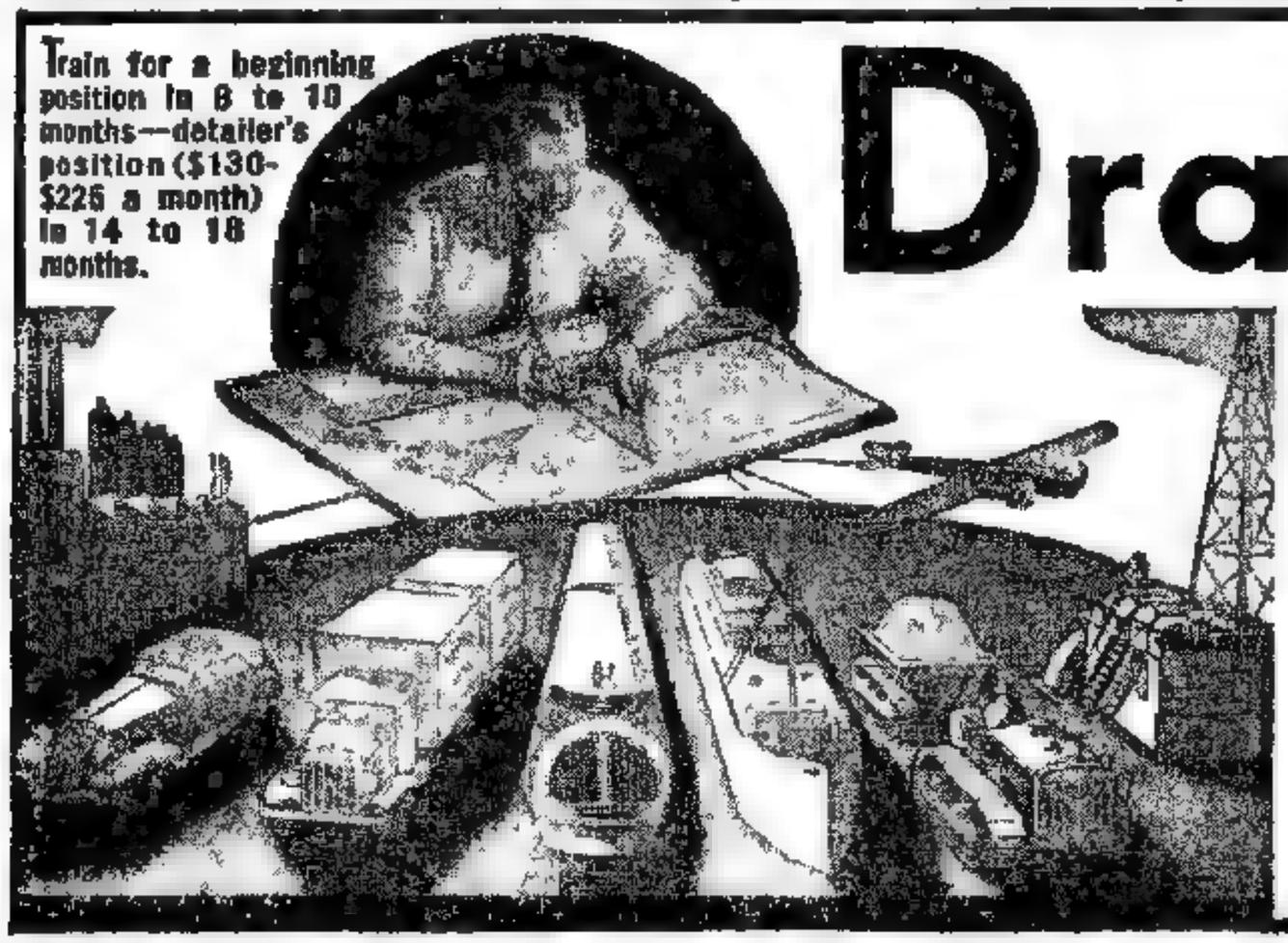

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to Kaiser. "The power has failed. Protect me from Sojarr!"

Kaiser sprang forward. With a sweep of his rifle-barrel, he struck aside both weapons, disguising the shudder of the shock he received from Birok's blade.

"Sojarr," he said harshly, "I can easily give this man the strength and cunning to kill you. Already your people wish it. But I cannot let you die until you have returned to me the girl you have stolen from us."

"Girl?" repeated Sojarr. "The flame-haired one? I know nothing of her. If this is an excuse to kill me, then kill and have done."

Kaiser glared back.

"You are lying," he rapped out.

He sprang away just in time to dodge the sweeping blow of Sojarr's staff.

"No man names Sojarr a liar," growled the young warrior. "Shoot me with that gun-thing of yours, or call down lightning. But when I speak, I speak truth."

THOSE who watched his face realized that Sojarr indeed had no knowledge of Ursula. No man would thus brave an electro-automatic rifle with only a stick, if he were defending a lie. Kaiser himself made a quick retraction.

"I believe you, Sojarr. But the girl is gone. Does any man of your people know where she is? Tell us, or I will order my men into this fight."

Sojarr paused. Both Birok and Kaiser were out of reach of his stick. Apparently they had lost all desire to fight him. Only by not having the trust of his people was he deposed, not formally by combat. He called out commandingly.

"Has any man here, or any woman or child, the knowledge of this woman of the Kai?"

Silence was the only answer. Sojarr turned back to Kaiser.

"She is gone, and we do not have her. What then?"

Kaiser measured Sojarr with his eye.

"You would have peace with me and my people. Help me, then, to find the girl."

"You would molest us no more?"

Kaiser made a slow nod of assurance, as though with reservations. But the gesture was enough for Sojarr, who understood little or nothing of deceit. Again he addressed his people.

"You have cast me out as leader, yet I will serve you. I go to look for the flame-haired woman. Wait here. I promise to return with her, give her back to her friends, and win a lasting peace with the Kai."

He stopped for his sword.

"It is not good, anyway, that so beautiful a woman as the flame-hair should die," he added, as though to himself.

"You are not going alone," said a voice from the throng.

When Sojarr had straightened up, Vara stood before him. She was armed and armored, and her eyes glittered with determination.

"I will join the search," she stated frigidly. "The flame-hair is not to be trusted with men. Lead the way, Sojarr."

CHAPTER XVI

The Speaking Stones

GAGGED and shackled by the unhuman limbs encircling her, Ursula Kaiser nevertheless fought hard. She strove to reach her holsters, but her belt was deftly unbuckled and snatched away. Desperately she put her hands behind her, clutching them full of long, coarse hair and pulling. The creature that had seized her grunted savagely, but dragged her along with added speed. She was being whisked between close-grown trunks and under netted vines to a dim depth of the forest.

At length her captor came to a halt under a tremendous leaf, wide as a canopy and ribbed like a whale-boat. Ursula's feet were allowed to touch the ground, but two lobster-claw talons kept tight hold of her leather coat.

"Do not make a noise, woman of the Kai," a hoarse voice growled into her ear, "or you will be torn to shreds."

"You have made a good capture,

Hekta," said another hoarse voice.

There was an exultant hubbub all around her. Ursula found herself standing among a horde of nightmare beings, like great bird-catching spiders enlarged and grotesquely humanized.

They had mighty bulbs of bodies, erect on two stout bowed legs, and two pairs of jointed arms, furnished with ugly but serviceable claws. Their heads were many-eyed, staring unblinkingly like clusters of bright, wicked beads of jet. Where these loathsome figures were not clothed in kilts, harness-straps and mail shirts, they were densely grown with coarse black fur, like moss or mold run wild.

The language they spoke was the semi-Grecian tongue of Sojarr's people. Ursula, striving hard to conceal her stark terror, essayed a speech in the same dialect.

"You—you are men?"

The giant spider-thing that held her shook his round tussock of a head and an iron cap.

"No. We speak man's tongue, but we are Truags. Rightfully we should own and rule this world. But ages ago, you Kai came and brought men to make us miserable. You planted these forests that choke the land and even the waters. You have a heavy reckoning to pay!"

"What are you saying?" demanded Ursula, stunned by this incomprehensible accusation. "We have not been among you six days."

The bearded head wagged again. Beneath the cluster of eyes was a stirring in the coarse mat of hair, as though the thing sought to smile. And indeed it managed a chesty grumble like a mocking laugh.

"Do you think we have not lurked near and listened, as Sojarr has? While Sojarr spied upon you, and Birok spied on Sojarr, we Truags observed the whole affair. We heard your leader call you the Kai. We saw your forces of fire and flight, and know that you can be nothing else but the Kai."

"And if so?" prompted Ursula pluckily.

"If we Truags had bravely fought the first Kai long ago, we would still rule our world. We did not, and we have suffered. But things are bad enough as they are. You will not make things worse with this new invasion. I, Hekta, leader of these Truags, promise that!"

GRADUALLY Ursula understood the vow. Her uncle had thought himself clever to claim demigod status with Sojarr's folk. He had had no conception of this other grisly race, which had no love or respect for the mysterious Kai—only fear and hate. Now she was apt to suffer for John Kaiser's ready lie.

"I have done you Truags no harm," she temporized. "In fact, my friends have been fighting and defeating your enemies who are under the man you call Sojarr."

Once again the horrid head shook.

"We do not trust the Kai. As to conquering Sojarr, we intend to do that ourselves. I know that he has gathered several followings under his rule. But I, Hekta, have done the same. All the Truags in this region are joining forces. We will let Sojarr and the Kai fight among themselves. When both sides are weakened, we will make a surprise attack. Not even your mighty weapons will be given a chance to prevent our killing all. I tell you this freely, woman of the Kai, because you will never have a chance to warn either side."

For all his abhorrent aspect, Hekta was a commanding figure, a born leader. Ursula had the courage to study him. He was half again the size of his biggest companion, wore two swords, several daggers and hand-guns, and bore himself like a medieval king. His right upper claw looked small and feeble in contrast with the other members. Ursula guessed rightly that he had lost that claw some time in the past, and was growing a new one.

"What will you do with me?" she asked.

Hekta paused to issue orders, forming up his patrol for a march. Two of them bound Ursula's hands behind her, but left her feet free for walking. As the group departed, Hekta answered her question.

"We Truags have long scouted and spied upon men. We have learned and

used their secrets—weapons, engines, cars. But one thing we have failed to learn, for they themselves forgot it. The Kai left certain flat stones with marks upon them. It is told that these stones could be made to speak."

"By heaven!" exclaimed Ursula in English. "Written records!"

"What do those words mean?" demanded Hekta. Then: "No matter. You are of the Kai. You will give the stones a voice. Ages ago, men forgot to do this and cast aside the stones as useless. My people gathered them up and kept them. Now we will have a greater power and wisdom than they."

Ursula almost forgot her dangerous plight. Marked stones "with a voice." Whatever the Kai had been, they had left inscriptions. Since the inhabitants of Titan spoke a form of Greek, perhaps the writing could be deciphered by using the same language. The secret of this world's seeming impossibilities—plants, humanity, even language similar to that on Earth—might be solved. She thought of herself second. If she could read the messages, she might be able to bargain with her captors.

"If I refuse to make the stones speak, what then?" she asked Hekta.

The party had paused, while those ahead cut a way through dense growths.

"You will die," the Truag leader said flatly.

"I think I will die, anyway," said Ursula.

"But there are quick, easy deaths and slow, hard deaths," reminded Hekta meaningly. "You had better do as I command."

SHE made no more questions or suggestions, and the group went in silence to its headquarters. It was a clearing like Sojarr's sown with salt to keep it bald, but much smaller and shaded above by the interlocked limbs of the tree-plants. Only narrow paths, most of them well grown up, gave entrance. Five old cars were ranged at one point, but these were plainly past their traveling days and now gave only shelter and storage space.

In the center of the clearing was a sort of oven or hearth made of stones, on which glowed the constant white light of tuvo.

"When Sojarr made himself a clearing, I made this nearby," Hekta informed. "We make and store weapons here, hold councils, and keep watch upon our enemies. So in ancient days did the Truags live, in one place and with great possessions, instead of rolling on forever in cars lest they be overgrown with foreign plants."

"You spoke of certain stones," Ursula reminded him.

"They shall be fetched."

Hekta raised his voice in a great shout, and several shaggy black faces peered from the doors of the cars.

"Let the speaking stones be brought out," commanded Hekta.

After a moment, two of his followers appeared, bringing a great, gray slab like a table-top between them. This they laid down in the full light of the flaming tuvo.

"It is said to be the first of the stones, and indeed it looks to be the oldest," Hekta told Ursula. "Begin, woman. Go about giving it a voice. Our ears are waiting."

"Be silent for awhile," Ursula bade as bluntly as though she, not he, were in command of the situation.

Walking to the stone, she knelt beside it.

As Hekta had said, there were plenty of "marks." Plainly these were letters, closely set and grouped in words and lines. Ursula forebore to whistle in amazement. What did it matter if she were close to death? Any scholar would risk a dozen deaths to see such a marvel.

At one hand was a string of larger capitals, evidently the head of the inscription. She took a pad of paper from her pocket, and a self-charging pen. Some of the characters looked familiar.

One word began with an upright angle, apex at top, with a cross-bar. It might be the Greek alpha, ancestor of the letter A. Ursula set it down as such. Next was a perpendicular line with a shorter bar crossing it near the top. That was how the early Greeks and Phoenicians made their T, or tau. Next came another upright angle, an A without the cross-bar this

time, and then an unmistakable second A. After that was a tilted Z. No, it was N—nu—

"I know what it means now!" said Ursula aloud.

She spoke raptly and in English. Hekta, watching, was curious.

"Are you speaking the language of the stone?" he queried.

"A—T—" spelled Ursula, ignoring him. "That angle will be the old lambda. L—another A—N— It's *Atlantis!*"

IN her high excitement, she rose and forgot her loathing and dread of Hekta. She grasped him by the shaggy wrist of his upper right arm, just above the little new claw.

"Tell me all you know, all that is handed down from the old time," she demanded. "These folk you name the Kai. Did they come in ships like those of my friends?"

"So it is told among the Truags," he replied, too surprised to resent her manner. "Out of the sky they flew on a flame of fire, from a world beyond the Shining One."

"From beyond Saturn, then," she muttered to herself. "I should think so. Far beyond Saturn, and they had space ships! Well, Plato and the others hint about that, too." Aloud she asked Hekta: "Why were they called the Kai?"

"I am not sure. I think that it is a word of men, which means those who dwell in the heavens."

"Mmmmm. *Ka.* That was Egyptian for the soul, and Egypt is believed to have been an Atlantean colony." Again she addressed her captor. "You say that all the plants about us, these great trees and bushes, came with the Kai?"

"That is well known. Our stories say that there was much open land at first. But the small plants of the Kai grew and multiplied."

"Of course, of course!" she cried. "Seeds, planted here, are free of all the modifications that held them down on Earth. Hekta, your legends are absolutely true!"

Abruptly she turned back to the stone. Stumbling and halting often, he read that ancient record, spelling out the letter that had fathered Greek, as Greek had fathered so many later languages.

This is a lasting memorial for our children. We left our home, the fair island of Atlantis, for the seas had so undermined it that we knew it must sink before long. In flying ships, propelled by the wisdom of our priest-scientists, we flew from Atlantis and indeed from our world itself, coming at last to a far planet.

We had flown many years, as reckoned on our own world. We had seen our old ones die and our young being born without sight of a new world on which to set our feet. At last we came to this moon, where now this record is set forth. Many of our flying craft perished on the way, and others in landing.

But we who survived found it a rich place, with land and water, life and light. The seeds we brought with us, both wild and tame, took wonderous root and gave us great comfort. The new home seemed far more hospitable than the trembling, violent world we had left behind us.

We found and defeated strange monsters like the spirits in old stories. These, however, proved wild but wise, learning and using our weapons against us.

The growth of the plants is so swift that it is foolish to persist in building a city, for we will be driven away by our own crops. Some say that our dwellings must be on wheels, to roll freely to find the best space and convenience from time to time.

Because we have grown to be many, and the memory is already dim of Atlantis, these records are inscribed in stone, that our children may not forget the world of their true origin. . . .

CHAPTER XVII

Death Prowls the Space Ship

OF the four men left at the camp of the explorers, two were scientists—Clymer and Suffern. The others, the space-hands Yale and Metz, took advantage of their leader's absence to loaf, play card-games and shirk their guard duty. But Clymer and Suffern were too busy probing into Titanian geology and botany to worry or enforce orders.

"There's absolutely nothing like it in scientific experience," Suffern kept saying. "I've found mosses, lichens, burdocks, grasses and even something like barley, all grown wild and gigantic. Clymer, it's not to be dreamed that such species can have a multiple

origin on separated worlds. That men are here, I can understand. After all, anthropoid forms occur on nearly all the habitable planets. But this vegetation!"

"Couldn't the men have migrated and brought the plants?" suggested Clymer. "I'm interested in the differences from Earth, not the similarities. So far as I can judge" — he referred to his notes—"there's less than one per cent of iron in this soil, while Earth's crust has more than four per cent. No wonder the people here are short on metal. But the soil's rich in another element, that stuff Kaiser took away from me for poor Hibbs to analyze."

He exhibited a corked vial with more particles of tuvo in it. Suffern peered at the crumbly bits.

"You say it's fire-producing, explosive? Maybe that has something to do with the modification of the flora."

Suffern stumbled off on new researches. Clymer watched him go, with the superior disdain of an enthusiast in one field for an enthusiast in another. Then he carried his specimen to the laboratory compartment.

He was less of a chemist than Hibbs, but he made progress. The new element, which Titanians called tuvo and Kaiser still called Hibbsite, lent itself to a series of intriguing experiments. Clymer's interest grew and crystallized into an idea that was not exactly new with the expedition.

"It's explosive, even in impure form," he decided. "If I can isolate it under vacuum, it'll be a greater fuel than any man ever guessed at."

A step sounded behind him. It was a heavy and purposeful step.

"That you, Suffern?" asked Clymer, without looking up from his work. "I've got a hunch. I'm developing it. This element is apt to be worth more than anything we've found or worked for. More than your freak plants, or Kaiser's wad of prize money! In fact, it will be the strongest, swiftest fuel for space craft ever—"

He turned. It was not Suffern who had entered the laboratory. Clymer opened his mouth, to speak or scream or plead. He did not live to make the sound. A Titanian sword of hammered iron slashed at his throat, severing his windpipe and the spinal cord with one murderous blow.

The geologist floundered around blindly. He was dead before he sprawled among the overturned wreckage of his experiment.

KAISER'S forge had passed the night at the big clearing, after Sojarr and Vara had somberly strode away. Kaulo was courteous and hospitable, though somewhat furtive.

In the morning they returned to their own place. Birok decided to accompany them, though some of the Titanians wanted him to remain.

"I will feel safer with you," Birok admitted to Kaiser as they departed. "Sojarr was not satisfied with that fight, and I have no more confidence in the sword that makes sparks. Why did it disarm him of his sword, but make no sparks against his staff?"

Kaiser evaded the question. To his men he announced an irritating loss. The pocket radio was missing. There could be no communication with the garrison at the ship.

Marching most of the day, they came in sight of their base. No living thing was visible. Pelton cursed.

"I told you it'd be like this," he complained to Kaiser. "I should have stuck here. Those lazy space-hands aren't keeping guard."

But Kaiser held up his hand for a halt.

"Maybe there's more to it than laziness," he said suspiciously. "We've had no news from the ship since we lost the radio. Anything may have happened. Wait here and cover me. I'm going to slip up to investigate."

"You think that—"

"Wait here, I said."

Kaiser moved on alone. They watched him gain the open hatchway and enter. For some moments there was no sign or sound. Then shrilled Kaiser's voice, loud and anxious.

"Come! Hurry! Something has happened!"

They ran toward the shouts. Kaiser met them on the threshold. He pointed.

"Look there!"

Sprawled across each other, just

inside the air-lock, lay the two spacehands, Yale and Metz. Around them were scattered playing cards and a few value-unit vouchers of small denomination. The head of each was pierced by a ragged hole, plainly the work of a Titanian hand-gun.

"The ship's been raided!" cried Kaiser. "At first I thought they were the only casualties. But inside—Come and see for yourselves."

In the control room, his hands still clutching big wads of leaves and stalks, was Suffern. He had been stabbed through the back so fiercely that the weapon had pierced his body completely. And in the laboratory was the dead body of Clymer. In his throat, its edge wedged tightly in a vertebra of his neck, was a Titanian sword.

Birok gazed at the corpses, his eyes big and wild above his beard. He was the first to make comment.

"Then you are not of the Kai. You can be killed. You are only men, wise and strong—but only men."

He swung around and walked away. Kaiser followed him out of the ship.

"Where are you going, Birok?"

The ex-leader's eyes met his, chill and disillusioned.

"I go to tell my own folk. I heard of a death among you, but did not see the body, did not understand. Now I know that you are liars and enemies. Sojarr was right."

Again he turned away and began to depart with swift, long strides.

"Come back, Birok!" called Kaiser.

The Titanian did not obey. Pelton had also come into the open. Leveling an electro-automatic pistol, he fired. Slowly Birok slumped down on his face, and lay without a quiver.

"HASN'T there been enough killing?" snapped Kaiser at his subordinate. "In heaven's name, why did you murder him?"

"I had to," replied Pelton, without much ceremony. He slid his pistol back into its holster. "He would have told that bunch, just when we've got 'em buffaloed. And there'd have been another scrap. They might have foxed us this time."

Kaiser bit his lip but said no more. They returned to the interior of the craft. The others had laid the four bodies side by side in the control chamber for examination.

"Titanian work, all right," pointed out Pelton. "A sword for Clymer and Suffern. Those funny hand-guns for Metz and Yale. A couple of days ago we stood off an army of them without any of us getting a scratch."

"Now one, or two at the most, sneak in and get four of us," Kaiser said grimly. "Don't you know who did it?"

"You mean Sojarr?" asked one of the hands.

"Naturally. He was the only one who didn't think we were of the Kai. He knew we were vulnerable and that we'd bring about his downfall. So he pretended to be going to look for Ursula and came here instead. He's out to kill us to the last man."

The speech was a plausible one. All who heard nodded in affirmation.

"How about Miss Ursula?" Pelton asked. "Sojarr has sworn to fetch her back. He knew it was his last chance to hold on with his own lot. And I, for one, thought he meant business."

"Probably he did. But that good-looking girl—Vara, I think her name was—joined him. The chances are that she, and not Sojarr, held Ursula in secret for a trump card. She must have told Sojarr about it. So, having Ursula safe, they turned their attention to us. Isn't that perfectly logical?"

"I can't think of any other explanation," confessed Pelton. "Well, your man Sojarr seems to have done away with all our specialists. First Hibbs is gobbled by that plant. Then Sojarr kills Suffern and Clymer. What's our next move?"

"Bury these four at once," ordered Kaiser. "No. On second thought, wait until dark. If any Titanians are watching, we don't want them to get the same idea that Birok did."

After dusk the four bodies were spaded under, near the unmarked grave of Hibbs. The eight survivors, all that remained out of a company of fourteen, grouped around silently to hear a prayer by their commander. Then they returned glumly to the ship.

"I'd order us to shift base if Ursula hadn't been lost," said Kaiser. "We'll have to stay here and form two watches. Pelton, you, Dode and Nissen turn in. I'll keep the first trick with Smith, Xavier and Borden."

The division was made. Kaiser posted the three men of his watch at the hatch-entrance and two of the ports. He himself went alone into the control room and sank wearily into a chair.

"Ursula," he said aloud, "you began by spoiling my plans. You stowed away, throwing everything off balance. And now you've put us all into awful danger. Why didn't you stay in school?"

JUST before dawn, Borden burst into the control chamber, breathless and unstrung. Kaiser looked up from the log-book, in which he was recording the strange and tragic events of the previous day.

"Aren't you forgetting yourself, Borden?" he snapped testily. "Deserting your post, barging in here without permission—"

"It's Smith, sir! He's dead at the door!"

Kaiser sprang up and hurried after the man.

Just inside the open hatchway, at the very point where Yale and Metz had been shot down, lay Smith. He had evidently turned his back toward the open, for he was sprawled upon his face, his hands flung out toward the interior of the ship. Between his shoulder-blades sprouted a long, straight, wooden shaft.

One look was enough to convince Kaiser that death had occurred some time ago. Grasping the shaft, he tugged it free. It was a two-pointed spear, such as the Titanians used for stabbing and throwing.

"He was killed by Sojarr," announced Kaiser at once. "Go and wake the other watch."

Nissen came first, huge and pale-haired. He stared at the body of Smith.

"Sojarr, sir?" he asked.

Kaiser nodded.

"Smith was a friend of mine from way back," said Nissen dully.

Pelton, half-dressed, hustled up.

"You're still trusting Sojarr to bring back your niece?" he demanded.

"He'll do it," said Kaiser. "He stands to profit by it. Restoring Ursula will clear him with his people, who are half on my side already and more than half-suspicious of him. So I'll let him bring her. But the moment she's with me once more, I'll kill Sojarr with my own hands."

CHAPTER XVIII

Hekta Passes Sentence

HEKTA growled, stooping over Ursula as she studied and spelled out the last of the engraved stones.

"Woman of the Kai, my patience is gone. For three days you have gazed at these stones, looking up only to ask for food, which we have brought you. But you have said nothing besides that, nor have the stones found their voice, as you promised. I said once that your making the stones to speak, as they are said to have done once, would give you the difference between an easy death and a hard one."

A dozen other Truags, lounging about the gloomy clearing, grumbled agreement.

"There are many things that are beyond your dark mind, Hekta," said Ursula. "The stones do have a voice, which I alone can hear and interpret. This"—she held up the sheaf of paper on which she had set down a rough and hurried translation—"enables me to tell you what they say."

"What, then? What do they tell of us, the Truags?"

"That you were indeed the first rulers of this world."

Hekta's monstrous body swelled like that of a big, shaggy frog.

"It is not a new knowledge, but I am glad that the works of men admit it. What else?"

"The stones say that your people were wild once, and that all you have in the way of weapons and tools you have learned from men."

Hekta snarled about that, neither

denying nor affirming the remark.

"And b e y o n d ?'' he demanded. "What, for instance, of this choking forest which has changed the old mode of living?"

"The plants which make it were once small," she said. "The fathers of the men—those whom you call the Kai—brought such small plants here when they flew from another world. Because the soil and the light and other aids to growth are of a different sort here, the plants became great and made the forest."

Hekta was not impressed.

"You still speak of things which we knew, in part at least, before you came here. Tell me rather how we Truags will overthrow the men who are our enemies."

"That," said Ursula, "will never be."

Her voice rang so sternly and defiantly that one of Hekta's claws dropped to the hilt of a weapon.

"You tell a lie!" he ranted in frightful anger.

"I tell the truth, Hekta. You seek to frighten me, to hold over my head a fear of painful death. But I say, here and now, that my death and its form will not make a thought's difference in what will happen to you people. You are doomed, you and all the Truags. Nothing can conquer men."

He tried to gesture it away.

"Woman of the Kai, I have organized many followings of Truags. We plan to fight the warriors of Sojarr, who are weakened by the battle with you Kai. If need be, we will draw still other followings of Truags to us, so that all the Truags alive will move and work and fight together. After we have done away with all our enemies, we will dig up much tuvo, make fires, and destroy this forest."

"Hekta, you speak vainly," she said, undismayed by his fury. "You saw how my friends, few in number but wise and provided with terrible weapons, defeated many of Sojarr's men, whom you fear. I tell you that more folk like me and mine will arrive from those other worlds toward the Sun. Against them you will be like straws.

"Those in the round flying ship are only an advance guard. You, who boast that you will destroy all men, are going to be destroyed yourself. Not a Truag will be left living, except in a cage to show curious children what strange beings once lived here!"

WITH a choking cry of rage, he darted out a claw and seized her throat, shutting off further speech. Furiously he shook her, until she dropped to one knee. The other Truags came running.

"The pit," ordered Hekta in a voice that seemed to seethe like the sound of doom. "Put her in the pit. Let her death come from one of the plants her people brought to afflict our world. Let her scream for mercy, and then let a knife or a sword end her pain. Woman of the Kai, you have let us hear your voice. It will shortly be heard in another fashion."

His followers dragged her away.

The pit of which Hekta had spoken was one of several in a great bank of soil at the edge of the clearing. Ursula, as she was lifted to the bank, saw that it was well salted to keep it barren. The holes in the top were two feet in diameter and ominously dark. At Hekta's word, one of the Truags brought a lump of flaming tuvo upon a clawful of wet clay. By its light he could see that the nearest hole, a tube that extended downward perpendicularly to a depth of eight feet or more.

"Prepare a stopper," ordered Hekta.

Two of the Truags hurried to the wall of vegetation so close at hand. A vine of some sort grew there, its tendrils as pallid as the sprouts of potatoes that had been many times magnified. Each of these tendrils bore at its end a round, plump growth that was also as pale as bloodless flesh.

Selecting one of these, the two monsters carried it to the lip of the hole. Behind it trailed the vine. Hekta drew a sword and severed this.

"Look at the seed of this plant," he bade Ursula. "Have you ever seen its like?"

Her captives had released her, and she bent and touched the seed. It was as hard and massive as though carved from wood.

"No," she said. "Whatever the thing was upon my world, it has become

something very strange on yours."

"Look at it," insisted Hekta. "What else do you see?"

Ursula looked hard, then drew back in spite of herself.

"It is alive. It breathes!"

"No. It is swelling. Once severed from its stalk, the seed swells to a great size, bursts and puts forth new vines."

"But what has this to do with me?" asked the girl anxiously.

The Truags laid the huge seed upon the mouth of the pit. Where it seemed too large to fit there, they hewed it away with heavy blows of their big swords.

"You will see what it has to do with you," promised Hekta balefully.

He and another Truag seized her in their powerful claws, lifted her and lowered her quickly into the pit. A moment later the seed was pushed into the mouth of it, stopping the tunnel like a cork in a bottle. She heard the Truags stamping and shoving to wedge it in firmly.

URSULA KAISER had already proved herself a young woman not easily daunted. She neither struggled against the close confines of her prison nor yelled for release. For a moment she thought that Hekta planned to smother her there. Then she saw little dots of dimness. On either side of her, level with her elbows, were little finger-sized ventilation holes, apparently pierced horizontally through the bank that held this pit. It was plain that a person punished in this fashion was not to perish for want of air. In fact, suffocation was carefully prevented. Why?

In a pocket of her jacket was a radium flare-light, which the Truags had not known to take from her. With a little scraping and shoving, for the elbow-room was limited, she got her hands on it and struck it alight.

She stood at the bottom of the pit, which was almost exactly cylindrical, with only a slight narrowing at the bottom. She was not tightly fitted, but still she could neither kneel, sit nor crouch. An examination of the pit's lining showed it to be soil hardened to the consistency of concrete. Perhaps it had been baked by that strange material the Titanians used for fire.

Now she looked upward, where the seed was wedged two feet above her. She shook her head puzzledly. It was less than that. A minute before she had thought the pit to be at least eight feet deep. The seed, for all the banging and squeezing from above, could not have been forced more than a few inches down toward her. But it was close above her head, not more than a foot away. Looking at it, she saw a sort of churning or twitching upon the woody undersurface. Its growing force was fully active.

It grew not only up, but down. She fixed her eyes upon a chipped inequality on the wall a fraction of an inch below the substance of the root. As she watched—for minutes or for seconds, she was not sure which—that chipped spot was hidden from sight. The seed was growing, swelling. Confined in the hard-walled pit, it was forcing itself down into the cylinder like a piston.

"This isn't going to happen to me," she said to herself.

Those words, which had become a commonplace on the lips of doomed persons, yet served to stiffen her resolve. Lifting her free hand, she set her palm against the underside of the seed and pushed upward with all her young strength.

The substance of the seed neither yielded nor shifted. It must have weighed heavily. Perhaps it was blocked from above. More probably, its growth had already wedged it too tightly to be stirred.

Ursula pushed stubbornly, planting her booted feet as widely apart as the cramped bottom of the pit would allow. Instead of lifting the growth by as much as a millimeter, she felt her elbow bending, bending. It was descending more upon her. It looked like a great pan of colorless dough, upside down and being puffed out by yeast so swiftly that one could watch.

But never did a pan of dough, whatever its ingredient, suddenly develop a split like a gaping, hungry mouth. Never did a pan of dough sprout a

tallow-colored creeper, like a hungry blind worm that moved as if it knew its business. It gaped toward her hand and wrist.

She screamed and jerked back the arm she had lifted. She was just a moment too late. The tip of the tendril had snapped around her hand, just at the fork of the thumb, in a cunning half-hitch.

She felt a sting and a gnawing, burning sensation. Again she cried out and struck at it with her other hand.

PERHAPS she had forgotten the radium flare she still held, but its fierce flame touched the side of the writhing shoot and shore through it like a knife.

A moment later Ursula was tearing loose the hitch of snaky vegetation. It had pierced her skin with a multitude of hairlike thorns. The remainder shrank back and retired into the split before the glare of the radium light.

"It's alive!" quavered Ursula. "It eats!"

She should have guessed that. The vine had been colorless, the seed likewise, with no leaves or other helps to vegetable life that might gather sunlight and atmosphere-elements. It must have organic matter, then. What organic matter was at hand but herself, penned up like a rabbit in a burrow?

She forced herself to look up. The split in the seed's surface had widened. Not one, but several of those hungry tendrils showed their tips, as though they peeped at her. One crawled farther forth, lowering itself toward her.

Again she lifted her flare, scorching its tip. The injured shoot hastily drew back, but another made a wicked sidelong strike at her wrist. She almost dropped the flare, but managed to tilt it and drive off this other enemy. Then she swung her weapon in a swift circle, momentarily driving back all the murderous tips. Bending her knees and drawing down her head, she made herself as short as possible.

"I'm done for," she muttered bitterly.

Above her appeared a round dozen of the shoots. Slowly but stubbornly they extended themselves toward her. The light and flame of the flare could never drive them all away.

Ursula felt that her mind was leaving her. Only illusion could make her ears think they heard a heavy scrabbling in the solid ground at her feet.

CHAPTER XIX

Rescue

SOJARR and Vara, crouched among the thickest of the trunks that surrounded Hekta's clearing, had seen and heard everything.

Probably sixty minutes' brisk walk along a straight trail, if one existed, would have taken them from their own place to this. But though Hekta had made his clearing in imitation of theirs, and for the express purpose of providing himself with a base for spying expeditions, they had never dreamed of an enemy lair so near. They had moved together to the vicinity of Kaiser's ship, avoiding the careless sentries there, spotting at last the mouth of the tunnel Ursula had made to escape her quarters.

Sojarr was interested at once.

"Wait here," he bade Vara.

He crept into the tunnel and was gone a considerable time. Returning, he found his companion nervous and critical.

"You were foolish to go in there," she scolded him. "What if one of the Kai had found you?"

"I would have had to kill him," muttered Sojarr.

"The Kai cannot be killed, or perhaps—Sojarr, have you killed any of them?"

He did not answer the question. Instead he held out something in his hand. It was a ray thrower such as Ursula herself had used to cut a way to freedom.

"I found a chamber full of strange weapons. I brought this. It must work like a hand-gun."

They started away in the dawn—for they had traveled most of the night—

on the trail of Ursula. It was plain enough for the eyes of practiced hunters and trackers like themselves.

Behind a thicket, Sojarr tested his new find. When he touched the switch, a gaunt, fierce beam gushed out, mowing away the sward and plowing up the ground like a spade in the hands of a frantic giant. Vara gasped, but Sojarr grinned.

"It is a good weapon, better than a hand-gun for some things," he commented, and thrust it into his belt.

"Sojarr," Vara almost snapped, "had you not come into my life, I would have met the worst of bad ends at the hands of Hekta. I owe you that rescue, and I owe you the word of my father, who joined his following to yours. When others turned from you, I became your companion on this search. But sometimes I wonder why I endure you."

"You think I was wrong to take this new gun of the Kai?"

"I think that you were wrong to go into their place."

AGAIN Sojarr made no response. He led the search in silence.

Once he saw one of the sextipeds, his ancient enemies. This specimen, which might have attacked him in his boyhood, now shrank away. Drawing the ray thrower, Sojarr assailed it with a quick, accurate burst of flame. It vanished in a cloud of nasty, oily vapor.

"Hekta could never stand against such a flash of light," observed Sojarr. "Come, Vara, this is a trail that is new-cut. See, here is something dropped by the flame-haired girl of the Kai." He picked up a lace handkerchief. "It has a pleasant smell," he observed, sniffing. "Don't you like it?"

He held it out to Vara. Her eyes blazed like the ray thrower itself, and she struck the handkerchief from his fingers.

"Pay attention to other things," she bade him angrily. "See, the tracks of that woman are here, set deep into soft mold. And other tracks— They are of Truags!"

"Truags took her, then," nodded Sojarr. "Let us follow their trail."

THEY came at last to the edge of the clearing. Close enough to hear and see, they watched long while Ursula deciphered the message of the heaped stones.

Far better than Hekta did Sojarr understand the story she told of ancient human beings, in cars that flew from other stars, coming to Titan and conquering the world. Sojarr was deeply interested and watched in fascination. Vara thought that his interest was for another matter.

"You think the flame-top is fairer than I am," she whispered fiercely. "You want to rescue her and make her your wife. Go ahead. I won't help you any further."

"Do you not understand, Vara?" Sojarr whispered back. "She is telling the story of this world's beginnings. Listen to what she says. The Kai were not gods or spirits or demons. They were only wise folk of old time, the fathers of men who live here today. We and the Kai are of one race."

"Which would make your marriage to the flame-top simpler," summed up Vara savagely.

TheTruags bore Ursula away to the bank of soils imprisoning her in a pit and planting the great hungry seed above her head.

"That is the end of her," said Vara, with honest satisfaction.

"No. We can rescue her now."

Sojarr fumbled in a pouch at his belt and drew forth a round metal disc with wire attachments, a clamp with ear-phones and a little transmitter shaped like a hollow cone.

"What are those?" demanded Vara. "Something else that belong by rights to the Kai?"

"Exactly," replied Sojarr, unabashed. "I have seen and known their like, in the metal chamber where I have so often gone by myself. There is a machine inside that speaks. This is another, but smaller."

"I saw it in the hands of the leader of the Kai," accused Vara. "You stole it from him."

Sojarr shook his head. "He threw it away as of no account. But I had watched its use. This thing is to catch the words one speaks, and this larger

round thing will make you hear them. Thus one gives news to his friend far off."

"Will you summon the Kai with it?"

"No," he stated. "I make this rescue myself, as I promised before the people. But first we must make Hekta and those Truags move away from the bank, where they have shut up the flame-top."

Cunningly he adjusted the wires, stripping the receiver from its clamp and fastening it to the broadcasting unit. His puzzled meddlings around the radio in the wreck had not gone for naught. After a moment he took up the transmitter and laid the unit with the attached receiver on the ground.

"Ah!" he said softly into the transmitter.

Vara jumped.

"You made this other thing speak!" she breathed.

"True." Sojarr fiddled with an amplifying dial, as he had done so often with the ship's radio. "Now the voice will be loud. Are the Truags all turned away from where the stones lie? Good."

Rising, he made a swift calculation of distance. Tossing underhand, he hurled the receiver and the broadcasting unit across the intervening space. It fell with a sharp metallic clank among the big stone tablets.

HEKTA, on the bank where Ursula was confined, turned abruptly and glared with all his little black eyes.

"What noise was that?" he demanded. "Go and see, you others."

Several of the Truags moved in the direction of the stones. The moment had come for which Sojarr had hoped.

"It is I, the voice of the ancient stones," he murmured into the transmitter.

From the receiver his words boomed out like the challenge of a war-god. There was a concerted flutter and cry of apprehension from every Truag present. Some shrank back, others stole gingerly forward. A line of ugly heads poked anxiously out from the cars. Only Hekta strove to appear undaunted.

"If the stones speak, why did they not speak before?" he blustered. "The woman of the Kai said—"

"I do not make myself heard at the command of a mortal, but only when it pleases me," Sojarr snubbed him grandly.

All the Truags had now turned to gaze at the stones. Sojarr and Vara cautiously began to skirt the clearing in the direction of the bank. They gained a point behind it. At Sojarr's gesture, she followed him furtively into the open and knelt with him, out of sight behind the massive hummock of soil.

Hekta was a brave beast, even when completely mystified.

"You call yourself the voice of the stones, but you sound like Sojarr, my enemy," he snarled. "If Sojarr himself were here, within slash-reach of my sword—"

Sojarr thrust the transmitter into Vara's hand. Drawing the stolen ray thrower, he snapped it on and turned its powerful beam against the base of the bank, at the point where he judged Ursula to be buried. Meanwhile Vara rose to the occasion.

"You think I sound like Sojarr because I took his voice to attract your attention," she said in a flat, hard tone. "I can assume any voice. Now I sound like a woman to your ears. But my strength and power are those of a thousand mighty warriors. Do you simple, blundering Truags seriously plan to destroy all men?"

Hekta's followers were actually cringing now. Hekta himself resolutely fought against the qualms which assailed him.

"You stones which talk, you have strange ways beyond my understanding," he said honestly and courageously. "I do not doubt that you are powerful as well as strange. But your power is for men, my enemies. I will fight you as fiercely as I have fought them."

He took a step toward the stones. There were twenty or so of his warriors in the open clearing by now, drawing together for mutual comfort. All at once they flung themselves madly upon him, holding and wrestling him back.

"No, Hekta, no!" they pleaded. "If the stones should strike you down—"

"Let them do so!" Hekta retorted sturdily. "I am your leader. It is my duty to protect you. If I fall, choose a better leader, one who will fight to the end against all this science and wizardry of the Kai and their human children."

SOJARR, judiciously plying the ray, had opened a tunnel to the spot where the soil had been hardened to cement-like lining for the pit. Now he drew a hand-gun and began to crack away the stony layer with the butt.

But Hekta's strength was too great for his overwrought followers. Shaking his massive body to fling them off, he struggled free. As he leaped, in among the stones, he spied something. One of his claws seized it. It was the receiver and the broadcasting unit.

"What is this little machine?" he roared. "Has someone played a trick?"

"Drop me," commanded the great and terrible voice of Vara from the receiver, "or I will bring down upon you a death foul enough even for the foul Truags. I will count three. One—two—"

The stubborn spirit of Hekta, overwhelmed by these wonders, was broken at last. He dropped the unit and backed timidly away from the stones. All four of his hairy, jointed arms were lifted as though to ward away an attack.

"With warriors I can fight," he jabbered. "Swords and guns I will face, though I die. But such matters as this are too much for Truags."

One of the others had an inspiration.

"The stones speak in anger because we have doomed the woman of the Kai to the fate of the pit," he cried. "Let us release her and make our peace."

"Leave her alone," thundered Hekta.

For once his orders went for nothing with his people. They made a rush for the bank, scrambling to its top. Hekta was right behind them.

Behind it they saw Sojarr and Vara stooping down, just in the act of dragging Ursula out by her booted ankles.

"We have been tricked by Sojarr!" roared Hekta. "Kill them!"

CHAPTER XX

Twilight of the Truags

DISCOVERED, Sojarr straightened up alertly. With a quick double grasp and jerk, he cleared both sword and hand-gun from their sheaths.

"Get the flame-top away!" he cried over his shoulder to Vara. "I swore that she would be returned safely. Make my oath true."

He fired straight into the thick of the Truags, pointblank and with deadly aim. His slug scattered the brains of a big warrior in the forefront. Sojarr rushed in to make the most of surprise.

He had always been a peerless fighter. Now he had every intention of outdoing himself. An ordinary Titanian would have been forced to run up the bank, and in the running might have been dispatched. Sojarr, with muscles born to twice the gravity of Titan's and growing stronger than even those of strong Terrestrials, made the distance in a sudden, mighty leap, his sword extended straight before him. It pierced the belly of another Truag, dropping him across the body of the one Sojarr had shot.

The others fell back on all sides, daunted and disorganized. That gave Sojarr a chance to plant his feet and fall on guard.

"I am Sojarr!" he yelled, as so often before. "I will kill every Truag who comes near."

There was almost something of the supernatural about the sudden appearance of this great mortal enemy of all Truags, hard upon the heels of that mysterious booming voice of the stone. And it was heightened with the appearance beside Sojarr of Ursula, who they earnestly believed was sealed up with her doom inside the very bank on which she now stood.

Neither Ursula nor Vara had entertained for a moment the idea of obeying Sojarr's command to run. The red-haired girl caught up the ray thrower Sojarr had used to dig her out, and held it hip-high.

Hekta saw and recoiled from this fresh marvel. But at once he realized and voiced the explanation.

"It is all a trick of that crafty Sojarr!" he bawled. "Deceiving us with the machine that speaks, he has dug the woman of the Kai from her prison. Shoot them down, Truags!"

Sojarr flung himself in front of Ursula just in time. A volley of slugs sang around him, two flattening upon his armored tunic and one ringing loudly on the helmet he wore. Ursula hastily leveled the ray thrower beneath Sojarr's arm. She drew its beam across the front of the nearest group of Truags as a boy draws a stick along a picket-fence.

Most of the stricken warriors, hit vitally, were cut clear in two and expired without a cry. The others, with arms or legs shorn off, flopped about with miserable cries. It was a swift, incomprehensible disaster that made the others hesitate, even Hekta.

"Your bravery runs out like water from a leaky pot!" Sojarr taunted. "Hekta, you have the advantage in numbers, but we have weapons to match your strength. Fall on us, if you will, with swords or hand-guns. The death-light of the Kai will wither you like leaves in a fire of tuvo."

Hekta flung up one big claw in command that his forces stand back. They did so, not at all unwillingly. Their giant leader spoke with a formal voice as big as had been the radio-magnified voice of Sojarr impersonating the speech of the stone.

"Sojarr, would you be willing to settle our old quarrel in a fair fight—you against me, with no weapons save what we are born with? Thus my numbers and your weapons will not be employed. It is seldom that Truag makes agreement with man, but I swear to abide by this word. What say you?"

"I say that such a settlement would be to my liking," rejoined Sojarr. "Cast off your armor then, Hekta, and your belt of weapons. I will do the same."

HE thrust his sword-point deep into the bank. Upon the upthrust hilt he set his helmet, and over that draped the belt that bore his gun-holster and dagger. With quick unlacings he divested himself of his armor. Clad only in a leather kilt and sandals, he sprang down from the bank and approached Hekta with careless, almost jaunty mien.

Hekta had also stripped himself of arms and armor. At his growled command, the Truags moved back toward the edges of the clearing. In the open space the two adversaries came face to face. Hekta, a head the taller and the superior in weight by almost two to one, was walking ponderously, all four of his claws extended and gaping. Sojarr was closing in with knees bent springily and naked brown torso half-crouched, his fists lifted chest-high and lightly clenched.

"Kill, Hekta, kill!" shrieked the Truags. "He is a baby beside you!"

Out darted one of Hekta's claws, trying for a hold. Sojarr ducked under it, and it clacked shut in the air with a wicked sound like scissors. Sojarr struck instantly at Hekta's great shaggy bulb of an abdomen, and heard the Truag leader grunt at the impact. A moment later he danced clear of another claw-clutch, laughing fiercely.

"You are huge but slow, Hekta," he jeered. "You will take root like a tree, and from your branches will grow other foolish Truags like fruit."

Wheeling, Hekta lumbered after him again. As before, Sojarr sprang aside, striking hard at flank and armpit. His knuckles rang as on a muffled drum, forcing from Hekta another grunt. But the Truag did not reel or retreat. He swung toward Sojarr and this time a claw fastened upon the man's naked shoulder.

Loud rang the exultant yells of the Truags. Ursula, watching upon the bank, felt her blood drain away from her heart. The viciously strong claw of Hekta was driving its saw-toothed edges deeply into Sojarr's flesh. With a throaty whoop of triumph, Hekta dragged the man close.

The crushing claw-grip hurt Sojarr sorely, but he had planned for such a happening. As he allowed himself to be jerked almost to Hekta's chest, he brought up both hands to seize the arm that dragged him. Then he spun

so that his back was to Hekta, dragging that arm quickly across his shoulder. Stooping and jerking, he hoisted the immense bulk of the Truag leader from the ground, threw him somersaulting through the air and into a heavy, floundering fall.

The cries of the Truags rent the air. Despite the agreement, some of them started forward to their leader's rescue. But Sojarr was quicker than they. Leaping to Hekta's side, he kicked the hideous spider-head with his sandal, then heaved the half-stunned enemy over on his face. He knelt upon the broad, heaving back, clasped his hands around the face and drew it backward with a mighty surge of all his strength. Even as the cursing Truags closed upon him, there rang out on the air a sickening snap.

Hekta's neck was broken.

STANDING on the bank of soil, Ursula screamed in terror for her champion. She still held the ray thrower, but dared not use it lest she kill Sojarr. Help came from another quarter—a quarter Ursula had forgotten and which the Truags had hardly recognized.

Vara had slipped along the edge of the clearing. Now she gave a war cry, clear and deadly.

"I am Vara, the warrior girl! I will save Sojarr!"

She charged. Over her head swung and whirled a gleaming sword-blade. Two of the clustered Truags swiveled around to meet her, both crossing swords with her. Then both howled in terrified pain, staggering helplessly. Next instant she had cut them both down and was thrusting and chopping at others. There were more howls, wild and terrified.

The knot of Truags broke up and fell back on all sides, scattering before that suddenly terrible sword. Sojarr came into sight again, on his hands and knees, stunned and bleeding.

"Sojarr!" cried Vara. "Up, man! They'll charge you again!"

The badly mauled leader shook his gory head.

"Leave me, Vara," he mumbled. "Take the flame-top—"

He almost collapsed his full length. Desperate, Vara extended her sword-point. She seemed only to touch his bare shoulder, as once on Earth great lords used to touch the shoulders of cavaliers to make them knights.

But Sojarr behaved as a new-made knight never acted. He yelled as though all his strength and wit had returned by magic, wriggled, rolled over and came to his feet. Vara caught his elbow, and the two of them rushed for the bank where he had left his weapons.

Again rallying, the Truags pursued. But Ursula let them have the full blast of her ray. They fell before it as moths in a candle, and those who could, retreated. Ursula followed them with her ray. The line of cars blazed up at its touch.

Sojarr caught up his sword, belt and helmet.

"Let us go," he panted. "They dare not attack—without more Truags to help."

Vara waved the sword that had wrought such wonders.

"O Truags!" she taunted at the top of her voice. "This day marks the beginning of your downfall. Not long from now, men will hunt you down like the vermin you are. Follow us who dare!"

None dared. The three gained the trail, hurried along it and came to the brink of the valley. Now Ursula took time to burn a dazzling gaze of admiration upon Sojarr.

"You came after me!" she breathed. "Risking your life, against almost hopeless odds—"

"I came because I must," he informed her.

Her green eyes glowed the brighter. Vara saw, and interposed.

"Do not think it was for love of you, flame-top," she stated. "Your people would have destroyed ours were you not found and returned. And I had some part in the matter, I think."

Sojarr faced her with a beaming smile.

"Vara, I had never believed you could ply a sword so well. For a moment I thought— But no, it was only Birok who—"

"Who had such a sword, you were

going to say?" finished Vara for him. She held forth the weapon, which she still carried drawn in her hand. "But this is Birok's sword. I stole it from him, as you stole other things from the flame-top's people. It was the tingling power of the sword that defeated the Truags so."

Vara again touched Sojarr with the flat of it. He yelled in pain and danced away. Ursula thrust herself in Vara's way.

"Leave him alone, you imp!" she cried in a rage. And to Sojarr: "You have saved me. Ask of me whatever you will."

"And I may have it?" he put in eagerly. "Anything?"

"Anything."

Ursula stood close to him, expectantly. He slowly put out a big hand.

"This, then."

He took from her the ray thrower. Aiming it quickly he spurted a pale ray of light. The electrified blade of Vara's sword disintegrated on the spot. With a wail of rage, the warrior girl stared at the fragmentary hilt left to her.

"A noble machine, and better than a hand-gun," observed Sojarr to Ursula. "Who among your people, flame-top, would so prize one of our weapons?"

CHAPTER XXI

Showdown

FOR the fifth time, Pelton, alone in his quarters, drew from their hiding place the things he had found by merest accident in the trash container of the control room. Titanian hand-guns, made like ancient horse-pistols, massive but deadly, and recently fired, to judge by the sooty film inside the barrels.

Of course there had been many Titanian weapons left on the field by the routed Swords of Sojarr. Of course everyone had gathered up some as souvenirs. But who had reason to fire such guns and to hide them afterward?

Two hand-guns. Two archaic slugs, launched in deadly flight by whatever was the Titanian equivalent of gunpowder. Two targets for those slugs —Yale and Metz!

Pelton ventured forth, looking up and down the corridor to be sure that nobody was observing him. Gaining the outer threshold, he examined the floor where the two men had fallen, then the bulkheads. The blood had been washed away long ago, but he hoped to find some other evidence of the tragedy. He found it.

The hatchway was trimmed with chromium metal. The bulkheads to either side were of sheet iron. But over one of these, from floor-plates to ceiling, had been pegged a great sheet of pressed wood to do duty as a bulletin board. As usual, it was covered with notices, new and old—details, instrument charts, roll sheets and so on. Coming close, Pelton examined these thumb-tacked papers. He removed one, then another, finally a third that was near the bottom.

"Here it is," he said half-aloud.

At a point less than a yard above the floor, a raggedly round hole the diameter of his thumb had been driven in the wood. Somebody had put a notice over it, perhaps removing the paper from elsewhere on the board.

Out flashed Pelton's sheath-knife. He dug carefully in the hole. After a moment he pried something out—a hammered bit of iron slag, red with rust and something else. Quickly Pelton pocketed it and replaced the notice above the hole. Returning to his own quarters, he picked up the hand-guns.

The slug, coated with blood, was too large to go into the first he examined. Into the barrel of the other it slid as if made for that weapon. Immediately he knew it had been.

"Now it makes sense," he said, again speaking aloud in his chilled assurance of what was befalling the people of the ship's company.

Yale and Metz had died from hand-gun slugs, but the wielder of those hand-guns had not been Sojarr. He had stood inside, not outside. Probably he had been in full view of them. They had known him, and had not feared him. One of his slugs, going

through a head, had lodged in the bulletin board. That meant that all four deaths—Suffern, Clymer, Metz, Yale—were the work of someone on board.

He pocketed the slug, slid the guns under his tunic, and almost ran to the control room. Inside, Kaiser was assigning work and guard details to the five remaining hands.

"Sir," Pelton fairly quavered, "may I see you alone?"

"I suppose so. Dismissed!" When the hands had left, Kaiser looked inquiringly at his lieutenant. "What is it, Pelton?"

"Murder, sir."

"Everyone knows murder has been done. We're guarding against that."

"Yes, sir, but we're guarding in the wrong direction," said Pelton desperately. "The killer's not an outsider. He's in here with us!"

KAISER'S eyes seemed to draw closer together.

"Let's go where we won't be interrupted," he said.

Rising, he led the way to the cabin from which Ursula had escaped, and which had remained locked ever since. There was barely room inside for the two men. They faced each other across the hole made by Ursula's ray.

"Pull yourself together, Pelton," said Kaiser. "Tell me what's happened."

For answer, Pelton produced the guns and dumped them on the bunk, then handed his chief the bloody slug. Almost jabbering in his eagerness to explain, he set forth his train of clues and his resultant deductions. It made even more plausible a story when put into spoken words.

"How about when Smith was speared at the door?" Kaiser demurred.

"Another fake," said Pelton. "He was facing outward at the time, the way I see it. The killer stabbed him in the back, then turned his body around. We'd better question the hands, one at a time—"

"Pelton," interrupted Kaiser in a soft, cold voice, "sit down in that chair and put up your hands."

He leveled an electro-automatic pistol. Gasping, Pelton obeyed.

"Wh-what—" he spluttered.

"Ingenious detective work, Pelton. But you seem to know exactly how this business was done. Also, you're very eager to find someone to blame for the murders."

"You think I did it, that I'd give you the dope if—" Pelton suddenly stared and went pale. He spoke more calmly. "So it was you all the time."

"That won't do, either. No, Pelton, don't move."

"You were the only person who could get into the ship alone," continued Pelton, completely emotionless now. "You told us to wait, went ahead and killed the lot. Then you called us to see them, as if you'd found them already dead. But why, Kaiser? Why?"

Kaiser's gaze was steady and cold as his pistol-muzzle.

"You are very sure, and even plausible. A pity you can't prove your fancy theories. Nobody saw me commit a murder, and without definite evidence—"

"I saw you."

The three words were carefully spoken, as by someone not completely familiar with the English tongue. They looked floorward and saw a face turned up toward them. It was Sojarr, creeping up through the tunnel Ursula had made. In his hand he pointed the ray thrower he had begged from Ursula.

"Do not point your weapon at me," he ordered Kaiser. "I have rescued the girl with flame-colored hair. She was in the hands of the Truags. I came ahead to report. Knowing that you considered me an enemy, I crept in this way, to hear you say that nobody had seen you kill. But I had seen you on the first night of your landing."

"Hibbs!" gasped Pelton.

"The little fat man who went walking with you," continued Sojarr. "Scouting near, I heard the two of you quarrel. It was about the fire mineral we call tuvo. You struck him with your fist. When he fell, you pushed him within reach of the leaf that eats men."

Kaiser stared at him.

"You seem to have me dead to

rights, Sojarr," he said. "I meant to kill you as a scapegoat. Now the tables are turned. You've got me. What will you do with me?"

"What's this reason you killed Hibbs and the others?" Pelton was demanding, up out of his chair again.

Kaiser nodded.

"Why should I keep from admitting it, when you both are so sure? Yes, I killed them all. I would have killed the rest, too. And the reason? That very mineral Sojarr mentions. He calls it tuvo. I'm calling it Hibbsite."

"Naming it after the man you killed," accused Pelton.

"Exactly. He can have the name. I'll have the control of that substance. It will make me richer and greater than all the prize money over offered."

Playing desperately for time, he poured out the whole story.

"Originally the plan was to leave the ship's company here as a colony, while I went back alone. The discovery of tuvo changed that. It can be made into fuel, and you can all go back and clear up your debts with the proceeds."

He grinned like a fat, sandy wolf.

"But that isn't my idea. I'll be the sole operator in that material. It's the greatest explosive ever dreamed of, worth more money and power than was ever in one man's grasp. And in one man's grasp it will be. You others are being counted out." Kaiser was talking faster. "There might be enough money to go around, but not enough importance."

"You forget that Sojarr has the drop on you," reminded Pelton.

"Yes—but not now!"

Kaiser threw himself flat on the floor. Sojarr pulled the switch of the ray thrower. Nothing happened. The ray had exhausted itself. In a flash, Kaiser was up again, gun leveled.

"I thought for a minute that the ray-gage spelled 'dead' on that thrower," he chattered. "Well, I was gaining time, and I talked too much. Neither of you will live to pass on what I've said. I'm going to drill you both and say I found Pelton plotting with Sojarr to betray the ship. And later I'll get the others out of the way, all of you who stand in the way of my complete ownership of Hibbsite, or tuvo, or whatever—"

"You've talked yourself out of it," said a harsh voice from the direction of the door. It had swung open. The space-hands were gathered there. Nissen pointed a rifle.

"You forgot, both of you, how space-hands like to listen in on secret conferences," Nissen ripped out. "I've heard all I need to know—Kaiser is guilty. And Smith, the one you stabbed in the back, he was my pal!"

Kaiser tried to turn and fire accurately at the same moment. His shot went wild. Nissen's did not. The rifle pellet made a sudden intense glow of orange fire between the commander's close-set yes.

Kaiser fell and did not move.

There was stunned silence that was broken after a moment by a clear, joyous cry from outside.

"Hello, there! It's Ursula. I'm back! Sojarr fought a whole nation of spider-things and saved me. And I've got such a story to tell about this crazy satellite. Probably you've been bored to death here at the ship without me. . . ."

CHAPTER XXII

Conclusion

THEY had finished lading the little ship that had come along with the expedition as a life-boat. Most of the load was fuel. The rest was a cabinet of vegetable and mineral specimens, and a sealed case of tuvo. To one side, the survivors of the crew were drawn up. Opposite stood Sojarr and Vara, watching curiously. Ursula Kaiser had opened the hatch-panel to enter, but paused for the last, lingering words of reluctant farewell.

"I'm still ready to give my place to anybody who would rather go than stay," she said. "Pelton? Any of you others? Sojarr, would you like to meet my people as representative of Titan?"

All shook their heads.

"Then I'm ready to go," she said, resigned. "I stowed away for Titan as a bored, thoughtless girl. I thought I'd have fun. Instead I ran into danger, sorrow, work, and a whole curriculum of moral lessons, by which I'm going to profit. None of you will ever be sorry that I'm going as your representative to the Governments of the inner planets."

"One thing, Miss Ursula." It was Nissen, speaking slowly as though the words weighted his throat. "Say you'll forgive me for—for what happened to your uncle. It was his life, or the lives of innocent men."

"I forgive you, Nissen," she said gently. "You don't seem to condemn him, and I don't. He was an unusual man, acting according to his very peculiar lights, playing a complicated game for high stakes. Well, he's been ruled out with a vengeance. I will carry no report about him, or any of you, that might cause trouble for anybody."

"Strange that Kaiser worried about getting us out of the way," mused Pelton, half to himself. "I doubt if any man, except Hibbs, was really anxious to make money or return home. We had all looked forward to this new world. Well, skip it. Here we are, and here we're ready to stay for awhile."

Ursula faced Sojarr and Vara.

"I'm taking tuvo and the notes of Hibbs and Clymer," she told them. "All the scientists of our expedition have been killed, but there are more among my own people. They will refine the tuvo and make of it the greatest rocket fuel of all history, carrying ships faster and farther than anyone has dreamed of. We won't have to wait twenty years between visits, after all. A ship will return next year, or before. I will come with it and visit you."

"We will meet you in this valley," replied Sojarr.

"I will bring a report of the prize money," continued Ursula. "It cannot belong to our expedition, as my uncle first hoped, nor to you, Sojarr, as we thought later. It must be spent for the benefit of all human natives of Titan. They are the descendants and heirs of the true prize-winners—the old Atlanteans who ages ago made the first successful flight to Titan."

VARA leaned upon her empty sword-sheath.

"Sojarr is still our leader," she said. "His decision will be law upon that stuff you call money, which I know nothing about."

"I can understand it as little as Vara, but if good things can be had in exchange for it, I will thankfully receive it," added Sojarr. "My following needs to be strengthened, and there are Truags left to fight. If we can have some of your weapons and tools, we may do much."

"Begin with the things left in the ship," bade Ursula. "Pelton and the others will be your friends and allies, showing you how to use the devices, and learning for themselves the way of life on Titan. Now, good-by all."

She paused, her green eyes fixing upon the tall, dark warrior who had fought for her.

"Good-by, Sojarr," she whispered. "I wish there were room in this little ship for two, and that you were of a different mind about going with me."

She entered the craft and locked the panel behind her. At Pelton's signal, the watchers all drew away to a safe distance. The rocket-tubes gushed fire, and the ship rose like a bird, dwindling swiftly into the sky.

Sojarr gazed after it, seemingly lost in meditation. Vara's voice recalled him to himself.

"Is your wish that of the flame-top, to be flying with her to those other stars from whence came the Kai in old times?"

Sojarr smiled and shook his head.

"You know that such is not my wish, Vara."

They fell in behind the space-hands, marching back toward the parked ship.

"She loved you, Sojarr. I saw it in those green eyes of hers. She will still love you when she returns next to this valley."

"It will be too late then, Vara."

"Too late?" The warrior girl glanced at him in frank bewilderment. "How too late?"

Sojarr mused with pursed lips.

"I have it in mind that by custom I exercise a right over you. Once, long ago, I captured you in battle from Hekta."

Vara sniffed. "It is not the same thing as capturing me from my own people. If you think to marry me, you will have to show another right."

Sojarr smiled broadly. "I am your leader," he said. "You must obey my word. If I say you must marry me, it is yours to obey."

"A warrior may refuse to obey the leader," reminded Vara, "and settle the question by duel. I still have the hilt of Birok's tingling sword. When I have put on a new blade, I will challenge you."

The thought made Sojarr wriggle.

"Does not the thought of our long companionship soften your heart, Vara? Do I not please you?"

"As a fighter, yes. As a wise counselor, yes. But as a husband? You have spoken a new thing, which I did not dream was in your heart. I cannot answer you."

Vara turned her back with a coyness that seemed ill-fitted to her warrior's gear.

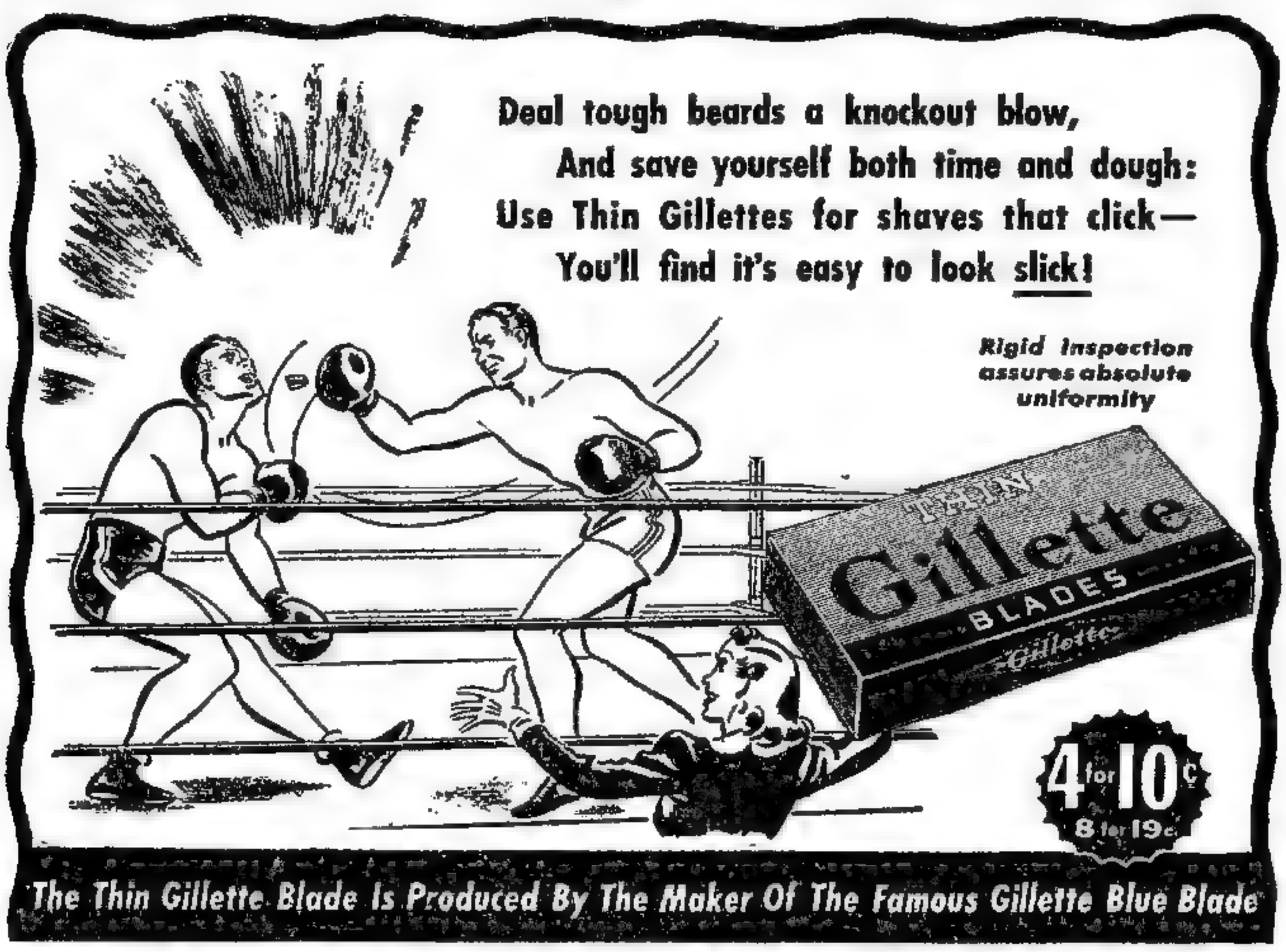
"Ah!" sighed Sojarr, and glanced upward. "There is nothing for me, then, but to await the return of the flame-top. When she alights in this valley, and I come to meet her—"

Vara cried out in angry protest, and from her girdle she snatched the hilt of the electric sword. It still had a ragged hand-breadth of metal blade, and this she brought into savage contact with Sojarr's elbow.

He yelled so loudly that the Terrestrials turned in amazement to see. They were just in time to watch Sojarr wrest the hilt from Vara's hand and to witness Vara wilt in most unwarriorly fashion in the sudden embrace of her leader.

"Mmmmm," observed Pelton. "Those old Atlanteans evidently taught their children how to kiss."

Next Issue: THE WATER WORLD, by Oscar J. Friend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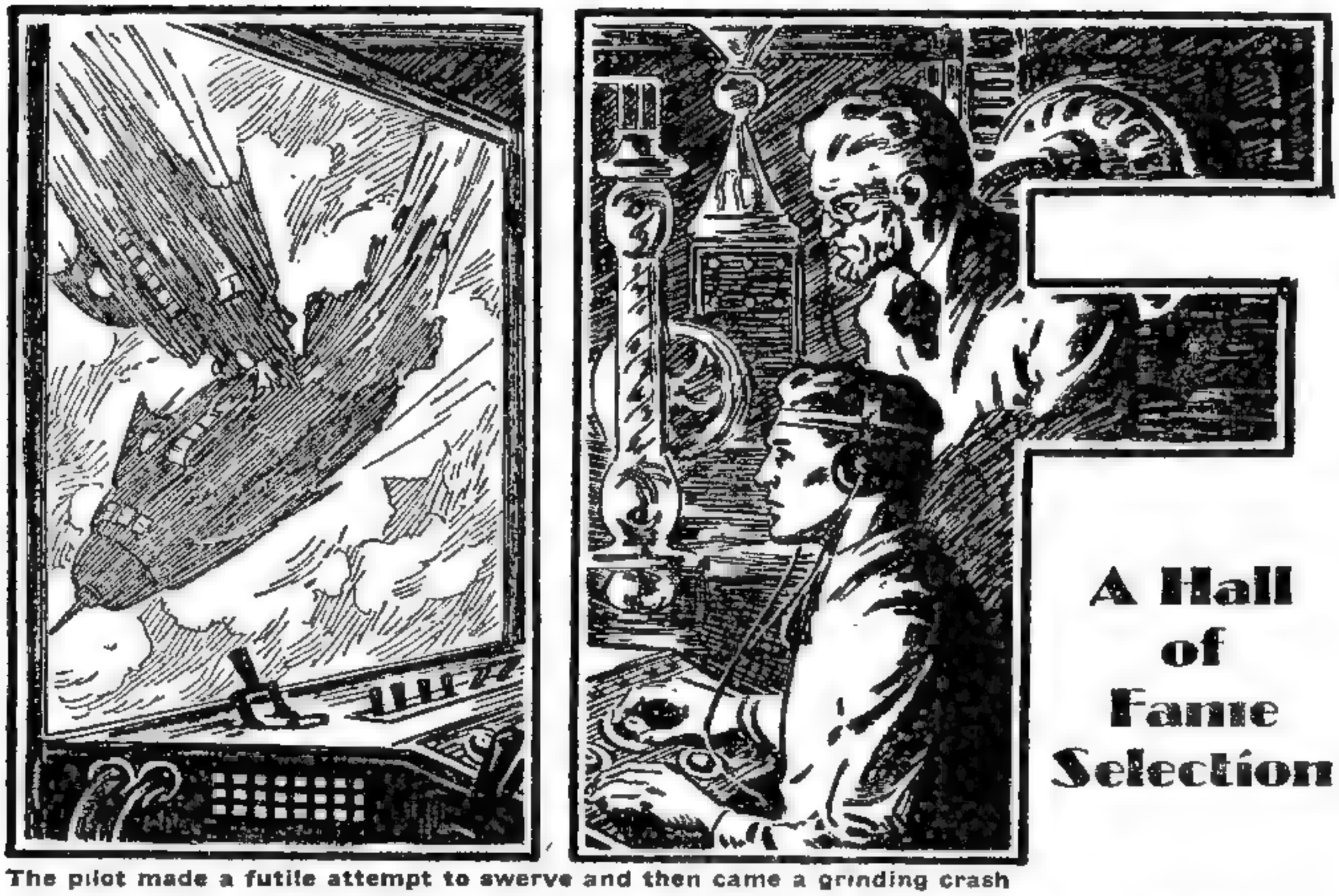


A Hall of Fame Selection

The pilot made a futile attempt to swerve and then came a grinding crash

By STANLEY G. WEINBAUM

I STOPPED on the way to the Staten Island Airport to call up, and that was a mistake, doubtless, since I had a chance of making it otherwise. But the office was affable and obliging.

"We'll hold the ship five minutes for you," the clerk said. "That's the best we can do."

So I rushed back to my taxi and we spun off to the third level, speeding across the Staten Bridge like a comet treading a steel rainbow. I had to be in Moscow by evening, by eight o'clock, in fact, for the opening of bids on the Ural Tunnel. The Government required the personal presence of an agent of each bidder, but the firm should have known better than to send me, Dixon Wells, even though N. J. Wells Corporation is, so to speak, my father. For I have a—well, an undeserved reputation for being late to everything; something always comes up to prevent me from getting anywhere on time.

It's never *my* fault; this time it was a chance encounter with my old physics professor, old Haskel van Manderpootz. I couldn't very well just say hello and good-by to him; I'd been a favorite of his back in the college days of 2014.

I missed the airliner, of course. I was still on the Staten Bridge when I heard the roar of the catapult and the Soviet rocket *Baikal*

EDITOR'S NOTE

Some stories are forgotten almost as soon as they are printed. Others stand the test of time.

Because "The Worlds of If," by the late Stanley G. Weinbaum, has stood this test, one of fantasy's prominent fan-journal editors, Mr. Ted Carnell, has nominated it for SCIENTIFICTION'S HALL OF FAME.

In each issue, for several forthcoming numbers, we will reprint one of the most outstanding fantasy classics of all time, as selected by our readers.

We hope in this way to bring a new prominence to the science fiction gems of yesterday and to perform a real service to the science fiction devotees of today and tomorrow.

hummed over us like a tracer bullet with a long tail of flame.

We got the contract, anyway. The firm wired our man in Beirut and he flew up to Moscow, but it didn't help my reputation. However, I felt a great deal better when I saw the evening papers; the *Baikal*, flying at the north edge of the eastbound lane to avoid a storm, had locked wings with a British fruitship and all but a hundred of her five hundred passengers were lost. I had almost become "the late Mr. Wells" in a grimmer sense.

I'd made an engagement for the following week with old van Manderpootz. It seems he'd transferred to N. Y. U. as head of the department of Newer Physics—that is, of Relativity. He deserved it; the old chap was a genius if ever there was one, and even now, eight years out of college, I remember more from his course than from half a dozen calculus, steam and gas, mechanics, and other hazards on the path to an engineer's education. So on Tuesday night I dropped in an hour or so late, to tell the truth, since I'd forgotten about the engagement until mid-evening.

He was reading in a room as disorderly as ever.

"Humph!" he grunted. "Time changes everything but habit, I see. You were a good student, Dick, but I seem to recall that you always arrived in class toward the middle of the lecture."

"I had a course in East Hall just before," I explained. "I couldn't seem to make it in time."

"Well, it's time you learned to be on time," he growled. Then his eyes twinkled. "Time!" he ejaculated. "The most fascinating word in the language. Here we've used it five times (there goes the sixth time—and the seventh!) in the first minute of conversation; each of us understands the other, yet science is just beginning to learn its meaning. Science? I mean that *I* am beginning to learn."

I sat down.

"You and science are synonymous," I grinned. "Aren't you one of the world's outstanding physicists?"

"One of them!" he snorted. "*One* of them, eh! And who are the others?"

"Oh, Corveille and Hastings and Shrimski—"

"Bah! Would you mention them in the same breath with the name of van Manderpootz? A pack of jackals, eating the crumbs of ideas that drop from my feast of thoughts! Had you gone back into the last century, now—had you mentioned Einstein and de Sitter—there, perhaps, are names worthy to rank with—or just below—van Manderpootz"

I GRINNED again in amusement. "Einstein is considered pretty good, isn't he?" I remarked. "After all, he was the first to tie time and space to the laboratory. Before him they were just philosophical concepts."

"He didn't!" rasped the professor. "Perhaps, in a dim, primitive fashion, he showed the way, but I—I, van Manderpootz—am the first to seize time, drag it into my laboratory, and perform an experiment on it."

"Indeed? And what sort of experiment?"

"What experiment, other than simple measurement, is it possible to perform?" he snapped.

"Why, I don't know. To travel in it?"

"Exactly."

"Like these time-machines that are so popular in the current magazines? To go into the future or the past?"

"Bah! Many bahs! The future or the past—*pfui!* It needs no van Manderpootz to see the fallacy in that. Einstein showed us that much."

"How? It's conceivable, isn't it?"

"Conceivable? And you, Dixon Wells, studied under van Manderpootz!" He grew red with emotion, then grimly calm. "Listen to me. You know how time varies with the speed of a system—Einstein's relativity."

"Yes."

"Very well. Now suppose then that the great engineer, Dixon Wells, invents a machine capable of traveling very fast, enormously fast, nine-tenths as fast as light. Do you follow? Good. You then fuel this miracle ship for a little jaunt of a half million miles, which, since mass and with it inertia, increases according to the Einstein formula with increasing speed, takes all the fuel in the world. But you solve that. You discover atomic energy. Then, since at nine-tenths light-speed, your ship weighs about as much as the Sun, you disintegrate North

Professor Haakel van Manderpootz

America to give you sufficient motive power. You start off at that speed, a hundred and sixty-eight thousand miles per second, and you travel for two hundred and four thousand miles. The acceleration has now crushed you to death, but you have penetrated the future." He paused, grinning sardonically. "Haven't you?"

"Yes."

"And how far?"

I hesitated.

"Use your Einstein formula!" he screeched. "How far? I'll tell you. *One second!*" He grinned triumphantly. "That's how possible it is to travel into the future. And as for the past—in the first place, you'd have to exceed light-speed, which immediately entails the use of more than an infinite number of horsepowers. We'll assume that the great engineer Dixon Wells solves that little problem, too, even though the energy out-put of the whole Universe is not an infinit number of horsepowers. Then he applies this more than infinite power to travel at two hundred and four thousand miles per second for ten seconds. He has then penetrated the past. How far?"

Again I hesitated.

"I'll tell you. *One second!*" He glared at me. "Now all you have to do is to design such a machine, and then van Manderpootz will admit the possibility of traveling into the future—for a limited number of seconds. As for the past, I have just explained that all the energy in the Universe is insufficient for that."

"But," I stammered, "you have said that you—"

"I did *not* say anything about traveling into either future or past, which I have just demonstrated to you to be impossible—a practical impossibility in the one case and an absolute one in the other."

"Then how *do* you travel in time?"

"Not even van Manderpootz can perform the impossible," said the professor, now faintly jovial. He tapped a thick pad of typewriter paper on the table beside him. "See, Dick, this is the world, the Universe." He swept a finger down it. "It is long in time, and"—sweeping his hand across—"it is broad in space, but"—now jabbing his finger against its center—"it is very thin in the fourth dimension. Van Manderpootz takes always the shortest, the most logical course. I do not travel along time, into past or future. No. Me, I travel across time, sideward!"

I gulped.

"Sideward into time! What's there?"

"WHAT would naturally be there?" he snorted. "Ahead is the future; behind is the past. Those are real, the worlds of past and future. What worlds are neither past nor future, but contemporary and yet—extemporal—existing as it were, in time parallel to our time?"

I shook my head.

"Idiot!" he snapped. "The conditional worlds, of course! The worlds of 'if.' Ahead are the worlds to be; behind are the worlds that were; to either side are the worlds that might have been—the worlds of 'if'!"

"Eh?" I was puzzled. "Do you mean that you can see what will happen if I do such and such?"

"No!" he snorted. "My machine does not reveal the past nor predict the future. It will show, as I told you, the conditional worlds. You might express it, by 'if I had done such and such, so and so would have happened.' The worlds of the subjunctive mode."

"Now how the devil does it do that?"

"Simple, for van Manderpootz! I use polarized light, polarized not in the horizontal or vertical planes, but in the direction of the fourth dimension—an easy matter. One uses Iceland spar under colossal pressures, that is all. And since the worlds are very thin in the direction of the fourth dimension, the thickness of a single light wave, though it be but millionths of an inch, is sufficient. A considerable improvement over time-traveling in past or future, with its impossible velocities and ridiculous distances!"

"But—are those—worlds of 'if'—real?"

"Real? What is real? They are real, perhaps, in the sense that two is a real number as opposed to $\sqrt{-2}$, which is imaginary. They are the worlds that would have been *if*—do you see?"

I nodded.

"Dimly. You could see, for instance, what New York would have been like if England had won the Revolution instead of the Colonies."

"That's the principle, true enough, but you couldn't see that on the machine. Part of it, you see, is a Horsten psychomat (stolen from one of *my* ideas, by the way) and you, the user, become part of the device. Your own mind is necessary to furnish the background. For instance, if George Washington could have used the mechanism after the signing of peace, he could have seen what you suggested. We can't. You can't even see what would have happened if I hadn't invented the thing, but I can. Do you understand?"

"Of course. You mean the background has to rest in the past experiences of the user."

"You're growing brilliant," he scoffed. "Yes. The device will show ten hours of what would have happened *if*—condensed, of course, as in a movie, to half an hour's actual time."

"Say, that sounds interesting!"

"You'd like to see it? Is there anything you'd like to find out?—any choice you'd alter?"

"I'll say! A thousand of 'em. I'd like to know what would have happened if I'd sold out my stocks in 2009 instead of '10. I was a millionaire in my own right then, but I was a little—well, a little late in liquidating."

"As usual," remarked van Manderpootz. "Let's go over to the laboratory, then."

THE professor's quarters were but a block from the campus. He ushered me into the Physics Building, and thence into his own research laboratory, much like the one I had visited during my courses under him. The device—he called it his "subjunctivisor," since it operated in hypothetical worlds—occupied the entire center table.

Most of it was merely a Horsten psychomat, but glittering crystalline and glassy was the prism of Iceland spar, the polarizing agent that was the heart of the instrument.

Van Manderpootz pointed to the headpiece.

"Put it on," he said, and I sat down staring at the screen of the psychomat. I suppose everyone is familiar with the Horsten psychomat; it was as much a fad a few years ago as the ouija board a century back. Yet it isn't just a toy; sometimes, much as the ouija board; it's a real aid to memory. A maze of vague and colored shadows is caused to drift slowly across the screen, and one watches them, meanwhile visualizing whatever scene or circumstances he is trying to remember.

"He turns a knob that alters the arrangement of lights and shadows, and when, by chance, the design corresponds to his mental picture—presto! There is his scene re-created under his eyes. Of course his own mind adds the details. All the screen actually shows are these tinted blobs of light and shadow, but the thing can be amazingly real. I've seen occasions when I could have sworn the psychomat showed pictures almost as sharp and detailed as reality itself; the illusion is sometimes as startling as that."

Van Manderpootz switched on the light, and the play of shadows began. "Now recall the circumstances of, say, a half year after the market crash. Turn the knob until the picture clears, then stop. At that point I direct the light of the subjunctivisor upon the screen, and you have nothing more to do than watch."

I did as directed. Momentary pictures formed and vanished. The inchoate sounds of the device hummed like distant voices, but without the added suggestion of the picture, they meant nothing. My own face flashed and dissolved, and then, finally, I had it. There was a picture of myself sitting in an ill-defined room; that was all. I released the knob and gestured.

A click followed. The light dimmed, then brightened. The picture cleared, and amazingly, another figure emerged, a woman. I recognized her. It was Whimsy White, erstwhile star of television and leading lady of the "Vision Varieties of '09." She was changed on that picture, but I recognized her.

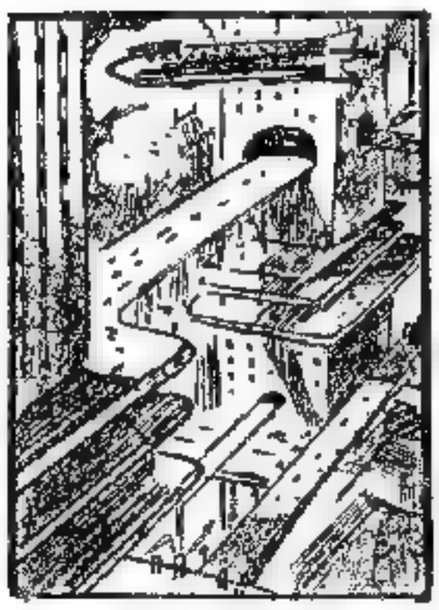
I'll say I did! I'd been trailing her all through the boom years of '07 to '10, trying to marry her, while old N. J. raved and ranted and threatened to leave everything to the Society for Rehabilitation of the Gobi Desert. I think those threats were what kept her from accepting me, but after I took my own money and ran it up to a couple of million in that crazy market of '08 and '09, she softened.

Temporarily, that is. When the crash of the spring of '10 came and bounced me back on my father and into the firm of N. J. Wells, her favor dropped a dozen points to the market's one. In February we were engaged, in April we were hardly speaking. In May they sold me out, I'd been late again.

And now, there she was on the psychomat screen, obviously plumping out, and not nearly so pretty as memory had pictured her. She was staring at me with an expression of enmity, and I was glaring back. The buzzes became voices.

"You nit-wit!" she snapped. "You can't bury me out here. I want to go back to New York, where there's a little life. I'm

Why "The Worlds of If" Is My Favorite



I DO not think that many readers of STARTLING STORIES can have disagreed with the Editor's previous choice of "classics" reprinted in previous issues. My own particular favorite, Stanley Weinbaum's "Pygmalion's Spectacles" has already appeared, and makes me fall back upon another epic by the same author as my first choice.

"The Worlds of If" will always remain fresh in my memory as a story based upon everyday factors. What far-reaching effects are likely to occur should I decide to do such-and-such a thing—or NOT do it? Upon such minor details the ultimate fate of the world may hang sometime in the future. We seem to be standing at vital crossroads of Life practically every moment of each day.

In this story, one of the finest of the van Manderpootz series, Weinbaum has worked upon those possibility factors in such a subtle manner that, unless the reader thinks deeply after having perused the yarn, he is likely to miss the ultimate ideas displayed owing to the smoothness with which the story has been told.

—*Ted Carnell*

bored with you and your golf."

"And I'm bored with you and your whole dizzy crowd."

"At least they're *alive*. You're a walking corpse. Just because you were lucky enough to gamble yourself into the money, you think you're a tin god."

"Well, I *don't* think *you're* Cleopatra! Those friends of yours—they trail after you because you give parties and spend money—my money."

"Better than spending it to knock a white walnut along a mountainside!"

"Indeed? You ought to try it, Marie." (That was her real name.) "It might help your figure—though I doubt if anything could."

She glared in rage and—well, that was a painful half hour. I won't give all the details, but I was glad when the screen dissolved into meaningless colored clouds.

"Whew!" I said, staring at van Manderpootz, who had been reading.

"You liked it?"

"Liked it! Say, I guess I was lucky to be cleaned out. I won't regret it from now on."

"That," said the professor grandly, "is van Manderpootz's great contribution to human happiness. 'Of all sad words of tongue or pen, the saddest are these: It might have been!' True no longer, my friend Dick. Van Manderpootz has shown that the proper reading is 'It might have been—worse!'"

IT was very late when I returned home, and as a result, very late when I arose, and equally late when I got to the office. My father was unnecessarily worked up about it, but he exaggerated when he said I'd never been on time. He forgets the occasions when he's awakened me and dragged me down with him. Nor was it necessary to refer so sarcastically to my missing the *Baikal;* I reminded him of the wrecking of the liner, and he responded very heartlessly that if I'd been aboard, the rocket would have been late, and so would have missed colliding with the British fruitship. It was likewise superfluous for him to mention that when he and I had tried to snatch a few weeks of golfing in the mountains, even the spring had been late. I had nothing to do with that.

"Dixon," he concluded, "you have no conception whatever of time. None whatever."

The conversation with van Manderpootz recurred to me. I was impelled to ask, "And have you, sir?"

"I have," he said grimly. "I most assuredly have. Time," he said oracularly, "is money."

You can't argue with a viewpoint like that.

But those aspersions of his rankled, especially that about the *Baikal.* Tardy I might be, but it was hardly conceivable that my presence aboard the rocket could have averted the catastrophe. It irritated me; in a way, it made me responsible for the deaths of those unrescued hundreds among the passengers and crew, and I didn't like the thought.

Of course, if they'd waited an extra five minutes for me, or if I'd been on time and they'd left on schedule instead of five minutes late, or if—if—*if!*

If! The word called up van Manderpootz and his subjunctivisor—the worlds of "if," the weird, unreal worlds that existed beside reality, neither past nor future, but contemporary, yet extemporal. Somewhere among their ghostly infinities existed one that represented the world that would have been had I made the liner. I had only to call up Haskel van Manderpootz, made an appointment, and then—find out.

YET it wasn't an easy decision. Suppose—just suppose that I found myself responsible—not legally responsible, certainly; there'd be no question of criminal negligence, or anything of that sort—not even morally responsible, because I couldn't possibly have anticipated that my presence or absence could weigh so heavily in the scales of life and death, nor could I have known in which direction the scales would tip. Just—responsible; that was all. Yet I hated to find out.

I hated equally not finding out. Uncertainty has its pangs, too, quite as painful as those of remorse. It might be less nerve-racking to know myself responsible than to wonder, to waste thoughts in vain doubts and futile reproaches. So I seized the visiphone, dialed the number of the University, and at length gazed on the broad, humorous, intelligent features of van Manderpootz, dragged from a morning lecture by my call.

I was all but prompt for the appointment the following evening, and might have been actually on time but for an unreasonable traffic officer who insisted on booking me for speeding. At any rate, van Manderpootz was impressed.

"Well!" he rumbled. "I almost missed you, Dixon. I was just going over to the club, since I didn't expect you for an hour. You're only ten minutes late."

I ignored this.

"Professor, I want to use your—uh—subjunctivisor," I said.

"Eh? Oh, yes. You're lucky then. I was just about to dismantle it."

"Dismantle it? Why?"

"It has served its purpose. It has given birth to an idea far more important than itself. I shall need the space it occupies."

"But what is the idea, if it's not too presumptuous of me to ask?"

"It is not too presumptuous. You and the world which awaits it so eagerly may both know, but you hear it from the lips of the author. It is nothing less than the autobiography of van Manderpootz!" He paused impressively.

I gaped. "Your autobiography?"

"Yes. The world, though, perhaps unaware, is crying for it. I shall detail my life, my work. I shall reveal myself as the man responsible for the three years' duration of the Pacific War of 2004."

"You?"

"None other. Had I not been a loyal Netherlands subject at that time, and therefore neutral, the forces of Asia would have been crushed in three months instead of three years. The subjunctivisor tells me so; I would have invented a calculator to fore-

cast the chances of every engagement; van Manderpootz would have removed the hit or miss element in the conduct of war." He frowned solemnly. "There is my idea. The autobiography of van Manderpootz. What do you think of it?"

I recovered my thoughts. "It's—uh—it's colossal!" I said vehemently. "I'll buy a copy myself. Several copies. I'll send 'em to my friends."

"I," said van Manderpootz expansively, "shall autograph your copy for you. It will be priceless. I shall write in some fitting phrase, perhaps something like *'Magnificus sed non superbus.'* 'Great but not proud!' That well describes van Manderpootz, who despite his greatness is simple, modest, and unassuming. Don't you agree?"

"Perfectly! A very apt description of you. But—couldn't I see your subjunctivisor before it's dismantled to make way for the greater work?"

"Ah! You wish to find out something?"

"Yes, professor. Do you remember the *Baikal* disaster of a week or two ago? I was to have taken that liner to Moscow. I just missed it." I related the circumstances.

"Humph!" he grunted. "You wish to discover what would have happened had you caught it, eh? Well, I see several possibilities. Among the worlds of 'if' is the one that would have been real if you had been on time, the one that depended on the vessel waiting for your actual arrival, and the one that hung on your arrival within the five minutes they actually waited. In which are you interested?"

"Oh—the last one." That seemed the likeliest. After all, it was too much to expect that Dixon Wells could ever be on time, and as to the second possibility—well, they hadn't waited for me, and that, in a way, removed the weight of responsibility.

"Come on," rumbled van Manderpootz.

I FOLLOWED him across to the Physics Building and into his littered laboratory. The device still stood on the table and I took my place before it, staring at the screen of the Horsten psychomat. The clouds wavered and shifted as I sought to impress my memories on their suggestive shapes, to read into them some picture of that vanished morning.

Then I had it. I made out the vista from the Staten Bridge, and was speeding across the giant span toward the airport. I waved a signal to van Manderpootz. The thing clicked, and the subjunctivisor was on.

The grassless clay of the field appeared. It is a curious thing about the psychomat that you see not only through your own eyes but also through the eyes of your image on the screen. It lends a strange reality to the working of the toy; I suppose a sort of self-hypnosis is partly responsible.

I was rushing over the ground toward the glittering, silver-winged projectile that was the *Baikal*. A glowering officer waved me on, and I dashed up the slant of the gangplank and into the ship; the port dropped and I heaved a long "Whew!" of relief.

"Sit down!" barked the officer, gesturing toward an unoccupied seat. I fell into it; the ship quivered under the thrust of the catapult, grated harshly into motion, and was flung bodily into the air. The blasts roared instantly, then settled to a more muffled throbbing, and I watched Staten Island drop down and slide back beneath me. The giant rocket was under way.

"Whew!" I breathed again. "Made it!"

I caught an amused glance from my right. I was in an aisle seat; there was no one to my left, so I turned to the eyes that had flashed, glanced and froze staring.

It was a girl. Perhaps she wasn't actually as lovely as she looked to me; after all, I was seeing her through the half-visionary screen of a psychomat. I've told myself since that she couldn't have been as pretty as she seemed, that it was due to my own imagination filling in the details. I don't know; I remember only that I stared at curiously lovely silver-blue eyes and velvety brown hair, and a small amused mouth, and an impudent nose. I kept staring until she flushed.

"I'm sorry," I said quickly. "I—was startled."

There's a friendly atmosphere aboard a trans-oceanic rocket. The passengers are forced into a crowded intimacy for anywhere from seven to twelve hours, and there isn't much room for moving about. Generally, one strikes up an acquaintance with his neighbors, introductions aren't at all necessary, and the custom is simply to speak to anybody you choose—something like an all-day trip on the railroad trains of the last century, I suppose. You make friends for the duration of the journey, and then, nine times out of ten, you never hear of your traveling companions again.

The girl smiled.

"Are you the individual responsible for the delay in starting?"

I admitted it.

"I seem to be chronically late. Even watches lose time as soon as I wear them."

She laughed. "Your responsibilities can't be very heavy."

Well, they weren't, of course, though it's surprising how many clubs, caddies, and chorus girls have depended on me at various times for appreciable portions of their incomes. But somehow I didn't feel like mentioning those things to the silver-eyed girl.

We talked. Her name, it developed, was Joanna Caldwell, and she was going as far as Paris. She was an artist, or hoped to be one day, and of course there is no place in the world that can supply both training and inspiration like Paris. So it was there she was bound for a year of study, and despite her demurely humorous lips and laughing eyes, I could see that the business was of vast importance to her.

I gathered that she had worked hard for the year in Paris, had scraped and saved for three years as fashion illustrator for some woman's magazine, though she couldn't have been many months over twenty-one. Her painting meant a great deal to her, and I could understand it. I'd felt that way about polo once.

SO you see, we were sympathetic spirits from the beginning. I knew that she

liked me, and it was obvious that she didn't connect Dixon Wells with the N. J. Wells Corporation. And as for me—well, after that first glance into her cool silver eyes, I simply didn't care to look anywhere else. The hours seemed to drip away like minutes while I watched her.

You know how those things go. Suddenly I was calling her Joanna and she was calling me Dick, and it seemed as if we'd been doing just that all our lives. I'd decided to stop over in Paris on my way back from Moscow, and I'd secured her promise to let me see her. She was different, I tell you; she was nothing like the calculating Whimsy White, and still less like the dancing, simpering, giddy youngsters one meets around at social affairs. She was just Joanna, cool and humorous, yet sympathetic and serious, and as pretty as a Majolica figurine.

We could scarcely realize it when the steward passed along to take orders for luncheon. Four hours out? It seemed like forty minutes. And we had a pleasant feeling of intimacy in the discovery that both of us liked lobster salad and detested oysters. It was another bond; I told her whimsically that it was an omen, nor did she object to considering it so.

Afterward we walked along the narrow aisle to the glassed-in observation room up forward. It was almost too crowded for entry, but we didn't mind that at all, as it forced us to sit very close together. We stayed long after both of us had begun to notice the stuffiness of the air.

It was just after we had returned to our seats that the catastrophe occurred. There was no warning save a sudden lurch, the result, I suppose, of the pilot's futile last-minute attempt to swerve—just that and then a grinding crash and a terrible sensation of spinning, and after that a chorus of shrieks that were like the sounds of battle.

It was battle. Five hundred people were picking themselves up from the floor, were trampling each other, milling around, being cast helplessly down as the great rocket-plane, its left wing but a broken stub, circled downward toward the Atlantic.

The shouts of officers sounded and a loud-speaker blared. "Be calm," it kept repeating, and then, "There has been a collision. We have contacted a surface ship. There is no danger— There is no danger—"

I struggled up from the debris of shattered seats. Joanna was gone. Just as I found her crumpled between the rows, the ship struck the water with a jar that set everything crashing again. The speaker blared, "Put on the cork belts under the seats. The life-belts are under the seats."

I dragged a belt loose and snapped it around Joanna, then donned one myself. The crowd was surging forward now, and the tail end of the ship began to drop. There was water behind us, sloshing in the darkness as the lights went out. An officer came sliding by, stooped, and fastened a belt about an unconscious woman ahead of us.

"You all right?" he yelled, and passed on without waiting for an answer.

The speaker must have been cut on to a battery circuit.

"And get as far away as possible," it ordered suddenly. "Jump from the forward port and get as far away as possible. A ship is standing by. You will be picked up. Jump from the—" It went dead again.

I got Joanna untangled from the wreckage. She was pale; her silvery eyes were closed. I started dragging her slowly and painfully toward the forward port, and the slant of the floor increased until it was like the slide of a ski-jump. The officer passed again.

"Can you handle her?" he asked, and again dashed away.

I was getting there. The crowd around the port looked smaller, or was it simply huddling closer? Then suddenly, a wail of fear and despair went up, and there was a roar of water. The observation room walls had given. I saw the green surge of waves, and a billowing deluge rushed down upon us. I had been late again.

THAT was all. I raised shocked and frightened eyes from the subjunctivisor to face van Manderpootz, who was scribbling on the edge of the table.

"Well?" he asked.

I shuddered.

"Horrible!" I murmured. "We—I guess we wouldn't have been among the survivors?"

"We, eh? *We?*" His eyes twinkled.

I did not enlighten him. I thanked him, bade him good-night, and went dolorously home.

Even my father noticed something queer about me. The day I got to the office only five minutes late, he called me in for some anxious questioning as to my health. I couldn't tell him anything, of course. How could I explain that I'd been late once too often, and had fallen in love with a girl two weeks after she was dead?

The thought drove me nearly crazy. Joanna! Joanna now lay somewhere at the bottom of the Atlantic. I went around half dazed, scarcely speaking. One night I actually lacked the energy to go home and sat smoking in my father's big overstuffed chair in his private office until I finally dozed off. The next morning, when old N. J. entered and found me there before him, he turned pale as paper, staggered, and gasped, "My heart!" It took a lot of explaining to convince him that I wasn't early at the office, but just very late going home.

At last I felt that I couldn't stand it. I had to do something—anything at all. I thought finally of the subjunctivisor. I could see—yes, I could see what would have transpired if the ship hadn't been wrecked! I could trace out that weird, unreal romance hidden somewhere in the worlds of "if." I could, perhaps, wring a somber, vicarious joy from the things that might have been. I could see Joanna once more!

It was late afternoon when I rushed over to van Manderpootz's quarters. He wasn't there; I encountered him finally in the hall of the Physics Building.

"Dick!" he exclaimed. "Are you sick?"

"Sick? No. Not physically. Professor, I've got to use your subjunctivisor again. I've got to!"

"Eh? Oh—that toy. You're too late,

Dick. I've dismantled it. I have a better use for the space."

I gave a miserable groan and was tempted to damn the autobiography of the great van Manderpootz. A gleam of sympathy showed in his eyes, and he took my arm, dragging me into the little office adjoining his laboratory.

"Tell me," he commanded.

I DID. I guess I made the tragedy plain enough, for his heavy brows knit in a frown of pity. "Not even van Manderpootz can bring back the dead," he murmured. "I'm sorry, Dick. Take your mind from the affair. Even were my subjunctivisor available, I wouldn't permit you to use it. That would be but to turn the knife in the wound." He paused. "Find something else to occupy your mind. Do as van Manderpootz does. Find forgetfulness in work."

"Yes," I responded dully. "But who'd want to read my autobiography? That's all right for you."

"Autobiography? Oh! I remember. No, I have abandoned that. History itself will record the life and works of van Manderpootz. Now I am engaged on a far grander project."

"Indeed?" I was utterly, gloomily disinterested.

"Yes. Gogli has been here, Gogli the sculptor. He is to make a bust of me. What better legacy can I leave to the world than a bust of van Manderpootz, sculptured from life? Perhaps I shall present it to the city, perhaps to the university. I would have given it to the Royal Society if they had been a little more receptive, if they—if—*if!*" This last in a shout.

"Huh?"

"*If!*" cried van Manderpootz. "What you saw in the subjunctivisor was what would have happened *if* you had caught the ship!"

"I know that."

"But something quite different might have really happened! Don't you see? She—she— Where are those old newspapers?"

He was pawing through a pile of them. He flourished one finally. "Here! Here are the survivors!"

Like letters of flame, Joanna Caldwell's name leaped out at me. There was even a little paragraph about it, as I saw once my reeling brain permitted me to read:

At least a score of survivors owe their lives to the bravery of twenty-eight year old Navigator Orris Hope, who patrolled both aisles during the panic, lacing lifebelts on the injured and helpless, and carrying many to the port. He remained on the sinking liner until the last, finally fighting his way to the surface through the broken walls of the observation room. Among those who owe their lives to the young officer are: Patrick Owensby, New York City; Mrs. Campbell Warren, Boston; Miss Joanna Caldwell, New York City—

I suppose my shout of joy was heard over in the Administration Building, blocks away. I didn't care; if van Manderpootz hadn't been armored in stubby whiskers, I'd have kissed him. Perhaps I did anyway; I can't be sure of my actions during those chaotic minutes in the professor's tiny office.

At last I calmed.

"I can look her up!" I gloated. "She must have landed with the other survivors, and they were all on that British tramp freighter, the Osgood, that docked here last week. She must be in New York—and if she's gone over to Paris, I'll find out and follow her!"

Well, it's a queer ending. She was in New York, but—you see, Dixon Wells had, so to speak, known Joanna Caldwell by means of the professor's subjunctivisor, but Joanna had never known Dixon Wells. What the ending might have been if—*if*—But it wasn't; she had married Orris Hope, the young officer who had rescued her.

I was late again.

Next HALL OF FAME Story

THE LITERARY CORKSCREW, by Dr. David H. Keller

Thumbnail Sketches of Great Men and Achievements

By MORT WEISINGER

THE SECRET OF THE TOWER

GIOVANNI de BARBERINI could hardly wait for his physics instructor to begin the class. For the husky lad with the bright, wide-open eyes knew all the answers to the day's assignment. He knew them backward and forward. He had to, if he wanted to maintain his rank as the best student at the University of Pisa. Too, his father had promised him a horse at Christmas if his grades were outstanding.

The boy looked up at his teacher, hero-worship in his eyes. Professor Galileo was the most popular instructor at the University. Not old and pot-bellied like the other teachers, but young and friendly, with a stance as straight as a rod. Only twenty-five years old was Professor Galileo, but already famous throughout Italy for his various scientific achievements.

Professor Galileo referred to some notes on his desk, looked up at his class.

"A very interesting assignment, we have today," he began. "Very interesting. A discussion of the velocity of falling bodies."

Galileo rifled some sheets of paper, found what he was searching for.

"The first problem," he drawled. "If two bodies if the same substance fall from the same height, and if one of the bodies weighs ten times as much as the other, which body will reach the earth first?"

Giovanni's hand was up in the air almost before the professor had finished the question. Galileo nodded at the boy, inviting his answer.

"The heavier object will reach the ground first," the boy stated. "And not only will it reach the ground ahead of the other object," the lad volunteered, "but it will fall ten times faster than the lighter object."

"Why is that?" Galileo asked, his eyes expressionless.

"Because the heavier object is ten times weightier than the other," the boy said eagerly. "That's correct, isn't it, sir?"

Professor Galileo stood up, walked back and forth across the rostrum before replying. Finally he spoke.

"No, your answer is not correct, Giovanni. It's wrong—utterly wrong!"

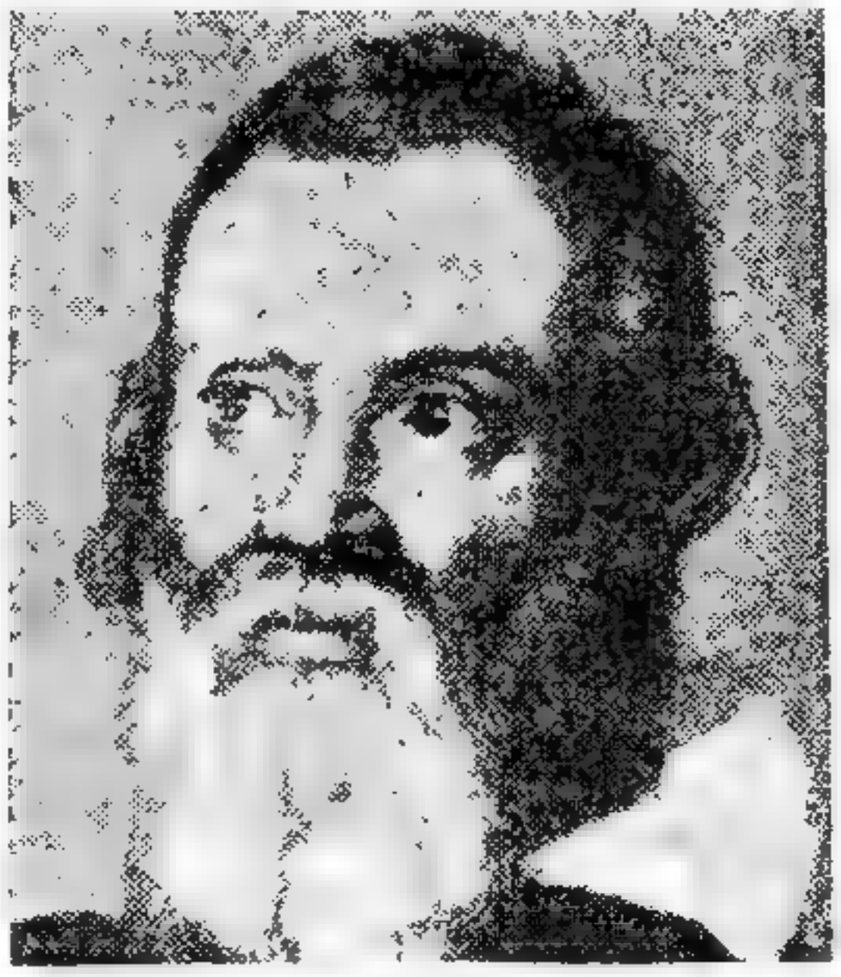
Disappointment and disbelief registered simultaneously in the boy's eyes.

"But my answer can't be wrong, Professor. It says so in my text-book. Why, if I'm wrong—then—then Aristotle himself must have been wrong."

Galileo motioned for the distraught boy to sit down. There was an impudent twinkle in the instructor's eyes, as if he had something up his sleeve.

"You're wrong, Giovanni," he said softly. "Your text-book is wrong. And so was Aristotle!"

The students in the room bent forward in their seats, regarding their instructor with a new fascination. What did he mean, the book was wrong? How could Aristotle be wrong, when the whole world had accepted his teachings for nineteen hundred years? Galileo was a great man . . . but Aristotle was immortal!



Galileo

"You're jesting, aren't you, Professor?" Giovanni ventured timidly, thought of his Christmas horse suddenly becoming a Pegasus stabbing through his mind.

Galileo strode to the blackboard. He picked up a piece of chalk, dotted the top of the slate with two marks, one large, the other small.

"This mark"—pointing to the large one—"represents an object weighing one hundred pounds. The other weighs ten pounds. If the two objects were to fall simultaneously from a height of say, two hundred feet, they will both reach the ground *at the same time!* For both objects are attracted to the earth by the law of gravity. And the law of gravity doesn't play favorites. It operates the same way for all things, whether small or large!"

Giovanni speared his hand into the air once more.

"But, Professor Galileo," he said, "please do not consider me impertinent, but what evidence have you to support your statement? Aristotle's theory sounds much more logical—that the heavier an object is, the faster it descends to the ground."

Galileo smiled good-naturedly at the perplexed student.

"I haven't any proof, Giovanni," he said mildly. "But Nature has the answer—and tomorrow morning we will try to make her reveal it."

The Italian physicist collected his notes on the desk, assembled them into a neat little stack.

"Class is dismissed for today," he announced. "But tomorrow morning we will meet—in front of the Leaning Tower of Pisa!"

As the students filed out of the classroom, their voices buzzing with excitement and curiosity regarding their instructor's promise to shatter a rule accepted by science for nineteen hundred years, the youthful Galileo paused a moment before the blackboard, speculation in his dark, wise eyes.

"I'm right," he whispered to himself. "I've got to be right!"

Early the next morning, Galileo arrived at the Tower of Pisa, pushing a wheelbarrow. His students were already waiting for him, their faces eager, their eyes shining with anticipation.

Galileo stopped before them, dropped the wheelbarrow. He pointed to the two objects inside—two cannon balls.

"The smaller metal ball weighs ten pounds," Galileo told them. "The larger one weighs one hundred pounds."

Giovanni was a lad that knew the score. A little more aware of what was going on than the others, he reached over to the wheelbarrow and inspected the cannon balls, as if measuring their weight. After struggling futilely to lift the larger ball, he seemed convinced of the difference in weight between the two objects.

Galileo turned to two of the other boys beside him.

"I will need your help," he said. "We will send the two cannon balls up to the top of the tower by means of the pulley. You two boys will mount the stairs to the roof. When I give the signal, you will drop the weights simultaneously. Understand?"

The two lads nodded. Galileo transferred the two weights to the basket of a pulley. He began pulling the ropes quickly, in short strokes, and the basket soared to the top of the tower.

A few minutes later the two lads assisting Galileo in his experiment signaled readiness from the top of the tower. Each had his weight balanced on the rim of the tower's ledge, ready to push it off to the ground, 179 feet below, at their professor's signal.

Galileo gripped Giovanni's arm.

"Watch, my lad. We are about to observe an experiment that is so simple no man has ever thought to make it!"

Galileo looked upward, waved his hand at the two boys 179 feet above.

"Ready!" he shouted.

Simultaneously, the two cannon balls, one ten times heavier than the other, began plummeting to the earth below. Straight down they hurtled, in a strange race whose result was to go down in history.

To the audience on the ground, it was impossible to determine which object was falling the faster. Down, down, they plunged, in a dizzy flight. To Galileo, as he watched the two shots swooping down in a vertical path, the fall seemed to take minutes, not seconds.

Finally, with two simultaneous thuds that blended as one, the two objects hit the ground before the feet of the observers. Both objects had crashed to the ground at exactly the same time!

The two cannon balls might have been two exploding bombs for all the furor they created. A loud cheering arose from the students, Giovanni cheering louder than all the rest.

And Galileo, only twenty-five years old, smiled victoriously, his body and soul thrilled by the fact that his logic had triumphed. He gazed thankfully at the two weights that had fallen to the ground. They had helped prove his theory.

Giovanni understood. He pointed to the weights, caught the eye of his teacher.

"Professor Galileo," he said, "with those two weights have fallen nineteen hundred years of misguided science!"

THE PEOPLE'S CHOICE

THE silvery-haired orator on the floor of the spacious Senate chamber in Washington addressed his sleepy audience of fellow law-makers. The veteran politician spouted and fumed, his thunderousvoice reverberating from one end of the hall to the other. He talked himself red in the face, pounded his fist emphatically on a stand beside him, made dramatic gestures, and finally paused a moment to pour himself a drink of ice-water.

Then the dynamic legislator, refreshed by the quenching liquid, continued with his sputtering, unaware that up above him,

seated alone in the spectator's gallery, was the target of his vitriolic harangue.

The man sitting quietly by himself, ruefully observing the verbal pyrotechnics he had inspired, wasn't a politician in any sense of the word. He was an inventor. But, like most inventors, he was hampered by lack of funds with which to finance his experiments. Invention and success are dependent on capital.. The inventor had hoped to raise that necessary capital by coming to the Capitol. So far he had been lucky. Friends in Congress had sponsored and passed a bill appropriating for him a fund of thirty thousand dollars with which to continue his experiments.

And now the inventor saw the thirty thousand dollars slipping from his fingers. For every bill must be passed by both the House and the Senate and, although the House had voted in favor of the bill, the inventor realized that the golden-tongued monologuist would never rest until he had convinced his fellow Senators that the bill must be defeated.

Every statement uttered by the loquacious speaker was like a nail being hammered in the inventor's coffin.

"This inventor is a crank, a dreamer," the hostile senator shouted at the legislating body. "His invention is a toy. If we grant the request of this visionary enthusiast there will be no end to similar demands. Every rattle-brained deviser of gadgets will ask the Government to finance his experiments. Gentlemen, I must ask you to vote against this bill. We must not waste the money of the tax-payers. . . ."

Up in the gallery, the wan-faced inventor reached for his hat and coat.

"It's no use," he told himself. "At the rate this old bird is going they'll never pass my bill. I'm sunk—through!"

The inventor gave up the ghost. Silently, dejectedly, he stole out of the vast hall, the tireless voice of the zealous Senator still echoing behind him. The battle was lost. The opposition was too strong, too powerful to buck.

Outside in the night, the inventor, crushed in spirit, headed for the nearest railroad ticket office. There he parted with the bulk of his meager savings in payment for a one-way ticket back to New York. He was licked, beaten. And now he was going back to New York . . . home, where he would forget about his invention, start life anew.

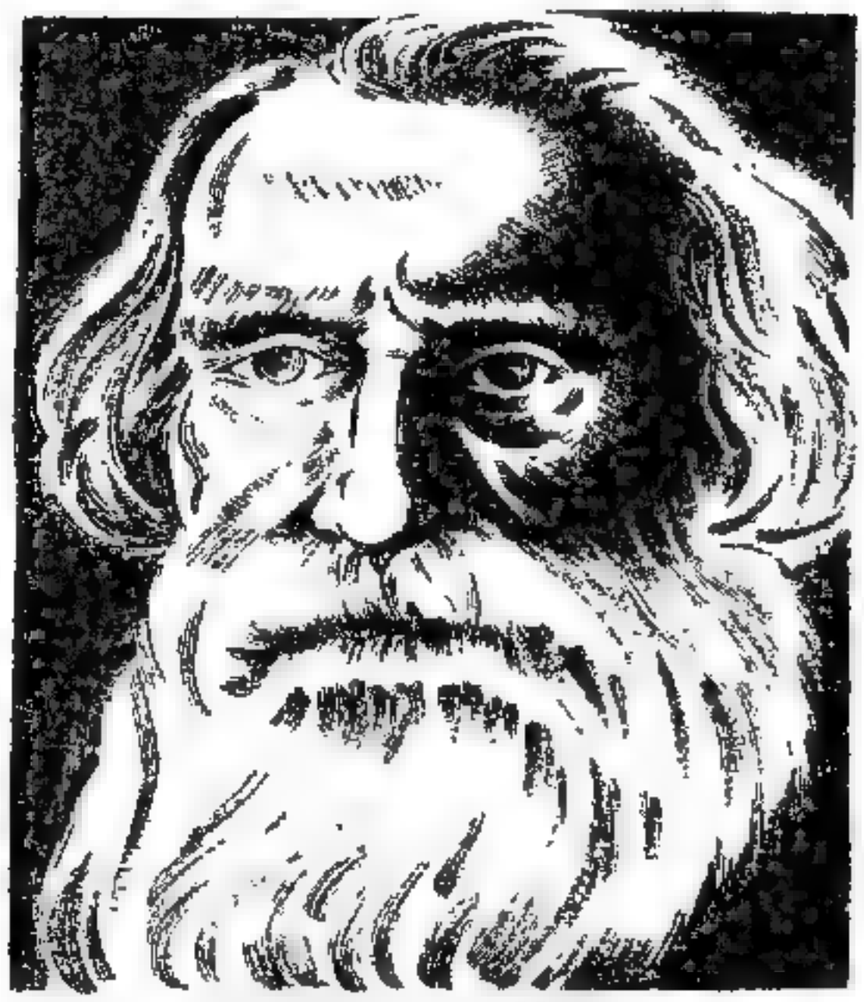
The inventor pocketed his railroad ticket, made his way on foot back to his modest lodging quarters. At the house he stopped before the landlady's room, tapped on the door.

"I'm leaving for New York tomorrow morning, Mrs. Jones," he told the landlady when she appeared. "My business in Washington is—finished. Here's the rent."

Mrs. Jones took the few bills proffered her, murmured something about "Stop here next time you're in Washington," and said good night.

The inventor walked the steps to his room, jingling the coins in his pocket. Thirty-seven and a half cents! That represented his entire wealth. Less than a half-dollar on which to live until he reached New York! And if that short-sighted, vote-seeking Senator hadn't argued against his bill he would have had thirty thousand dollars. The inventor couldn't help but swear softly at his miserable luck.

Dawn came slowly for the inventor that morning, after he had spent a sleepless night of rolling and tossing. He got up, washed, shaved, dressed, and then began the business of packing his belongings. Then, his heart



Samuel F. B. Morse

heavy, he made his way downstairs, where breakfast was being served to all the boarders.

"My last breakfast in Washington," the inventor told his neighbor. But he couldn't eat. His lips felt dry, parched. The food choked in his throat when he tried to swallow. Bitter disappointment had killed his appetite.

Suddenly he heard the landlady call out his name.

"A visitor for you, sir," she told him. "A Miss Annie G. Ellsworth. She's waiting in the parlor."

Curious, the inventor got up from the breakfast table, strolled into the parlor. A Miss Ellsworth? He only knew one Miss Ellsworth, the daughter of the Commissioner of Patents. What did she want—something wrong about the way he had filed application for the patent on his invention? Well, it didn't matter now.

"Professor, I have come to congratulate you," the young lady greeted him, her voice gay.

"Congratulate *me!*" the inventor said in astonishment.

"Why, yes," she replied with enthusiasm, "on the passage of your bill. The Senate last night voted your money, thirty thousand dollars! Think what that means, Professor Morse. Now you can go ahead until your invention, the telegraph, is a reality!"

The startled inventor stared at the girl, incredulous.

"It's true, it's true," the young lady assured him. "The opposition failed to defeat the bill. Are you thrilled, Professor?"

Professor Morse fumbled with the thirty-seven and a half cents in his pocket.

"What do you think, Miss Ellsworth?" he said, grinning.

And on May 24, 1844, the first anniversary of the passage of the appropriation bill, Samuel F. B. Morse, sitting at the transmitter in the Supreme Court room at the Capitol, telegraphed to a group of friends in Baltimore the now famous and immortal message:

"What hath God wrought?"

DARK VICTORY

THE old man lay awake in his bed, his eyes shut. He knew it was morning. He could feel the heat of the early sun streaming in through the window, bathing his bed with its cozy warmth. The old man turned, faced his head toward the window, his eyes still shut. Timidly then, the aged man opened his eyes.

As he opened his eyes the old man drew a deep breath, muttered a silent prayer. But it was of no use. For he saw only—blackness. Not even a gleam of light filtered through his masked vision. Yesterday, and the day before, he had been able to distinguish between night and day. But now he couldn't even do that. He was totally blind.

The old man lay in bed, unmoving, thinking. Stone-blind! So it had finally happened to him. He was eighty years old now. How many more years of life awaited him he didn't know. But he did know one thing—what he intended to do about it. He had made his mind up months before, when his constantly failing eyesight had warned him that utter blindness was inevitable.

"There's a way out," the old man told himself grimly. "I don't want the world to pity me, to treat me as though I were an old, toothless dog. I won't have my friends feeling sorry for Erastosthenes!"

With a half-choked sigh that seemed to imply purposefulness rather than futility, the old man got out of bed. He stretched his tired frame, then made his way to the chair where rested his clothes. His practiced fingers went perfectly through the routine of reaching for each necessary garment.

Blind . . . blind . . . blind . . . the thought drummed maddeningly through his weary brain as he dressed. Never to see the sun again . . . never to see the flowers . . . the birds . . . the sky. By the gods, there had been so much he had wanted to do, so much he had wanted to see!

Erastosthenes suddenly straightened up in his chair, his acutely developed sense of hearing informing him that someone was approaching his little house.

"They mustn't know what I am doing," the elderly Greek geometer told himself. "If they knew, they'd stop me. I'll have to fool them. I will fool them!"

The footsteps were louder now. In a moment rough hands were knocking sharply at the door.

Erastosthenes shuffled to his feet, made his way nimbly to the door, opened it.

"Greetings, friend Erastosthenes," boomed a hearty voice. "I bring you food and wine. A repast fit for the gods!"

"It is good to see you"—Erastosthenes bit his lip—"I mean it is good to have you visit me, friend Marcus," he said pleasantly, careful to make his voice sound as cheerful as possible. "What news bring you to a man who is glad he cannot look upon a dull world any longer?"

"First you must eat," the fellow boomed heartily. "That's one pleasure nobody foregoes."

Erastosthenes smiled. "I'm not hungry yet, my friend," he said. "Leave it here. It will make a fine meal at noon."

The two men talked animatedly for an hour. Erastosthenes was blind, but the younger man, Marcus, respected him. For Erastosthenes was the most eminent geometer and astronomer in all of Greece.

"Tell me, friend Erastosthenes," said the effervescent Marcus after awhile. "Is it true that you once measured the size of the Earth?"

Erastosthenes played with a grape in the bowl before him, tore it from its vine, let it fall to the ground out of his trembling fingers.

"Yes, Marcus. I once measured the size of the Earth. And you know, the strange thing about it is that I accomplished the whole business without stepping outside the confines of my house and garden!"

Marcus smiled to himself. Of course he knew of Erastosthene's achievement. Every scientist in Greece did. But he had wanted to make the old, blind man forget the bitter present, live once again with his memories.

Marcus pretended amazement.

"You measured the size of the Earth—without going outside this house? How? Good friend, tell me how."

Erastosthene's face radiated with joy. He never tired of telling how he had accomplished this miraculous feat. Even when he thought of it now, it still thrilled him.

The Greek scientist told his attentive listener his story. How, in order to measure the circumference of the world, he had made three assumptions. He had assumed the Earth to be a sphere, the city of Syene to be on the Tropic of Cancer, and Syene and Alexandria to be on the same meridian.

He had reasoned that men, living on the surface of a sphere of unknown dimensions, might be able to calculate its radius if one could only measure a known arc of one of its great circles. The most convenient of such circles would be a meridian, since its angular length could be readily determined by taking the simple difference of the two observed noon elevations of the sun taken simultaneously at each end of the arc. The linear distance between the two ends would have to be actually measured along the

ground. Erastosthenes knew that at noon on mid-summer's day, objects cast no shadow in Syene.

Thus he had only to observe the noon altitude at Alexandia on the same day and have the difference in latitude of the two places.

This the Greek geometer had done by means of a gnomon. That is, he measured the shadow of a stake set in the ground of his garden. The sun had an elevation that day of 82° 47′. His segment of a meridian was therefore 7° 13′. He did not think it necessary to measure the linear distance directly, as that had already been done by the efficient Egyptian tax collectors.

He had consulted their maps and picked off his figures. From those he stated the length of a degree of latitude to be 61.945 miles. That figure may be compared with the value of 59.8 used today—an error of only 3½%!

As Erastosthenes concluded the technical details explaining his feat, Marcus got up from his chair.

"I don't understand it all, friend," he confessed, "but it must be right. All the scientists agree with you. And now, I must depart."

The aged scientist said good-by, thanked his visitor for the food. After his friend had left, Erastosthenes walked out into his garden, smelling the fragrant flowers and the clover-scented grass.

It was good to be alive, he told himself—if you could see.

The day sped by. Other visitors dropped in bringing gifts, news. The old scientist spoke to them all. He knew why they had come. They were his friends. They felt sorry for him. They were trying to cheer him up, raise his spirits. Finally night came. The old man went to bed.

The next day, the next, and the next, it was the same. The greatest men in Greece came to pay homage to the brilliant geometer. Erastosthenes received them all. He smiled at them, laughed with them, and jollied them along.

"The old man's taking it fine," they whispered to each other.

And after they had all gone, Erastosthenes smiled a secret smile to himself.

"They do not suspect," he mused. "By tomorrow morning . . . it may all be over."

The old man made his way falteringly to his bed. Weakly, with much effort, he got in between the covers. His breath was coming wheezingly now, in spasmodic gasps. He gritted his teeth, shut his eyes. Then he leaned back on his pillow and went to sleep—expecting never to wake up.

For Erastosthenes, the first man to compute the size of the Earth, didn't want to live on it if he couldn't see. That was why, for the past four days, he had not touched a single morsel of food!

Erastosthenes died the next morning. Outside, in the garden that had been the scene of his epoch-making discovery, friends found the food they had brought the old savant—food that he had left untasted.

Erastosthenes had had his fill of the fruits of success. When they were about to turn bitter in his mouth, he had preferred to die of voluntary starvation.

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Eons Must Pass Before the Future Can Answer the Riddle Bequeathed to It by a Forgotten Century

The force caught Nancy Jordan, lifted her

THE ETERNAL MOMENT

By ROBERT ARTHUR

Author of "Song at Twilight," "Cosmic Stage," etc.

ABOVE them New York City was dying in a smashing rain of bombs and a roaring sheet of fire. But in the seemingly interminable passage down which Professor Tempus led the way, descending ever lower into the bowels of Manhattan, there was no faintest sound from the world above to tell of the death and destruction there.

Professor Tempus' flash lit up an irregular crevice through the rock, ap-

parently natural, now wide, now narrow, always rough underfoot. Water seeped down the granite sides and the air was damply stale. At one place a brook sprang out of the sheer stone, splashed down along the passage for a hundred yards, then vanished into a cleft.

Nancy Jordan followed the tall, hurrying figure of Professor Tempus as well as she could. Tempus—Alexander Tempus, Ph. D., Nobel Prize winner in Chemistry for 1948, the last year in which the prizes had been awarded, the disappearance of Sweden as an independent state having effectively put an end to further awards—traversed the route as if thoroughly familiar with it. But Nancy Jordan stumbled repeatedly, and had difficulty in keeping up. She had never been in the curious, downward slanting passage before, and she was frightened.

"Professor Tempus!" she gasped. "Where are we going, please? Is it much farther?"

"Just around the next corner, Nancy, my dear," Tempus answered, his voice unctuously reassuring. "Only another fifty steps. Then you'll see the little surprise I have fixed up for you."

"But what about Peter?" the girl queried anxiously. "I thought he was coming with us. You said you had a way to get us all to safety! He isn't—Peter isn't still up *there?*"

She jerked her head to indicate the city of flaming wreckage that was dying above them with a roar of falling buildings, exploding thermogen bombs, and screaming humanity. Mercifully, a hundred and seventy feet of rock shut the sound of it from their ears, but still the pale and shaken girl could hear them in her memory.

Professor Tempus, waiting at a turn in the passage, shook his head.

"Don't worry about Peter, my dear," he told her, his deep voice setting up strange, rumbling echoes. "He has full instructions. He'll be along shortly. There were some things it was necessary to do in the laboratory before the flames reached it. He remained behind to do them."

Only partially reassured, Nancy Jordan came up beside him. The lean, long-faced man took her arm, helped her over a last rocky obstruction, and then, to her amazement, thrust open a heavy door of stainless steel that was as massive as the portal of a bank vault, and as nicely machined to make an air-tight closure of the crevice.

BEYOND the door, the beam of the electric torch showed a natural cavern in the bedrock of the island. It had been enlarged and made regular with tools, and painted with a gray substance that was probably Professor Tempus' own permapaint, absolutely impervious to moisture or gas. In effect the room was an air-tight, moisture-tight chamber, and with the door bolted, man-tight as well, secure against anything but explosives or high pressure drills.

The tall man touched a button. Light flooded the room. Nancy Jordan entered the forty-foot square space and stopped, the perplexity on her features increasing. The place was fitted up for comfortable living for some time. There was an electric stove, powered by a unit of the new home-power batteries that had been devised to fight the menace of air raids which cut off the central power and light stations.

There were shelves cut into the rock, stocked with canned and compressed foods. There were beds, chairs, a table, writing materials, and in one corner a modestly equipped laboratory bench.

Oddest of all were six large clocks, each having but a single hand, affixed to the rock above a small orifice, beneath which a lever protruded. From the clocks came a faint ticking, but all seemed motionless.

Nancy turned, completely mystified.

"Professor Tempus!" she exclaimed. "I don't understand. You said you had a way to get us all to safety, out of the city, away from the bombardment. I thought you meant—"

"—that I was going to lead you all the way under the river, perhaps, to an exit in Jersey from which we could flee northward into the wilderness?" Tempus finished for her. "Ah, no, my dear. That would be dangerous and uncomfortable.

"No, this is our refuge from war's uncertainties and dangers. Here, nearly two hundred feet below the earth's sur-

face, protected by a layer of solid rock and the flowing waters of the beautiful Hudson, now somewhat polluted by drifting wreckage and floating bodies. Here, Nancy, we are going to wait out the period of terror which has come upon the Earth — a terror which will not stop until it has let loose upon the world such a scourge of pestilence and death as mankind has never endured before."

"But surely—" Nancy tried to say, her eyes wide and her face pale, "surely—"

"It is not going to be as bad as I predict?" Tempus interrupted, with a smile. "I assure you, Nancy, that if anything, I have understated the case. You saw yourself what was left of New York after only forty-eight hours of attack. It is true that the enemy were aided by adherents in our ranks, who crippled our defenses. But the end would have been the same in any case. All those bombs that did not seem to do any damage—those held typhus and other germs. A warfare once thought the prerogative of fiction writers—but unfortunately life imitates art."

TEMPUS paused, went on more slowly.

"No, Nancy. London is levelled. Every city in Europe is leveled at this minute. Every city in America will follow. What war does not do, revolution, fire, famine and disease will. Our world is finished, Nancy, and you and I are going to wait here until another one has risen to receive us—a civilization in which my particular talents will be appreciated and given their proper place and reward."

"But"— Nancy Jordan gasped, and drew back from him, though he merely smiled, as if uttering a pleasant witticism—"but I don't quite understand. Peter—"

"Is dead," Professor Tempus told her indulgently. "Your fiancé has gone the way of mortal flesh. I was forced to keep it from you, lest hysteria lead you into doing something rash. A fragment of bomb casing—"

He shrugged, and was silent. Nancy fought for the words that could not get past her throat.

"*Dead!*" she whispered agonizedly. "Peter's dead?" Her throat choked.

"Unfortunately. As I say, I did not tell you, lest you refuse to come with me."

"And you—" Nancy got out. "You planned—"

"Planned this retreat from disaster?" Professor Tempus made a slight movement with his long, pale hands. "Quite so. I saw years ago the ultimate end of our present system of life, beneath war's trampling heel. I did my modest best to circumvent fate by making it possible to leave my unfortunate world behind."

"But—but—" Even through her shock and horror, there was a question Nancy Jordan could not help asking. "Surely you don't think that in three months, or six months—"

"Things will be different?" Again Tempus interrupted, picking up her thoughts for her. "Of course not. Nor in three years. Or thirty. In three hundred years, perhaps. In five hundred, surely. In fact, in five hundred years I rather think that a civilization of a splendor undreamed of now will have arisen. It is that civilization we are going to wait for, Nancy, my dear.

"To put it simply, in a moment I am going to seal that door, and we will begin a five-hundred-year vigil within this chamber."

PROFESSOR TEMPUS put away the restorative smelling salts when he saw Nancy's eyes open. She lay back on the bed to which he had lifted her, and half raised her hand, as if in fright, as he bent over her. But Tempus only corked the small bottle and put it to one side, shaking his head chidingly.

"My dear Nancy, you must not be frightened. Perhaps I was too theatrical for you. I should have remembered —the scenes you have witnessed, your sweetheart's death—but you must be strong. No more fainting, eh? Here, drink this."

Somewhat reassured, Nancy took the glass he held out, tasted the contents, recognized it for a simple sedative, and drank. Then, more composed, she sat up.

"That's better." Tempus beamed. "Now I'll explain."

He sat down in a chair wrought from curved rods of stainless steel and leaned toward her, his dark eyes holding hers almost hypnotically.

"You see, Nancy," he said in an easy, conversational tone, "this room is the product of three years' work, mostly done by myself. It was started long before I met Peter Benson, or you. Since Peter has been working—excuse me, while he was my assistant — I dropped some hints, but never fully revealed my plans to him.

"I discovered by accident the crevice through which we came here, when a section of flooring in my laboratory gave way unexpectedly. I explored it, found it suitable for a purpose that was forming in my mind even then, and so never told anyone else of its existence.

"As we sit here, we are now between one hundred and fifty and two hundred feet below the bed of the Hudson River, three hundred yards west of Riverside Drive, south of the spot where my home and laboratory stood.

"This room, as you may have guessed, is quite air-tight and water-tight. It is, I think—or certainly will be when I have set off the blast that will close the crevice behind us—about as secure a refuge from discovery as I could construct with the limited sums at my disposal. It is somewhat akin to the inner chambers of the pyramids, save that its occupants are destined for uninterrupted life, rather than uninterrupted death.

"Naturally, when I said that we would be in this room for five hundred years, you were startled. But in a moment you will see that it is really quite simple.

"The principle which I propose to utilize to effect our flight into the future—it does sound dramatic when put like that, doesn't it—is really not at all complicated. Only an extension—a great extension, it is true—of the work that brought me my Nobel award. You remember what that was, don't you?"

"It had something to do with anesthesia, didn't it?" Nancy asked, uncertainly. "About putting people to sleep?"

"Close," Professor Tempus approved, flashing his curiously pale and artificial smile. "But not quite. Not anesthesia strictly, but a process for slowing down the bodily processes. A semi-suspension of animation, in fact, during which the psychological and physiological reactions of the patient were so retarded that a day could pass in what seemed no more than ten or fifteen minutes. So that an operative case, given a few whiffs of my life decelerating gas — they called it Tempusine—could spend two weeks recovering without being aware that more than three or four hours had passed."

NANCY nodded. "I remember now. But I don't see how—"

"—it applies to us? Like this. By a very great refinement, and certain alterations in the molecular makeup of Tempusine, I have succeeded in producing a gas which, when inhaled, within a minute or two brings about in an individual a state almost undetectable from *complete* suspension of animation.

"I have, to be precise, succeeded in slowing down, or decelerating, every process of life in any ratio I desire. I could slow down the tempo of our existence a million times if I desired to. Think of it! It would take a year to light a cigarette! And I believe that, using still stronger concentration, it might be possible to continue decelerating almost indefinitely. I don't know for sure, but I can see no reason why it should not work."

"I—I still don't think I understand," Nancy Jordan confessed. A slight frown crossed Professor Tempus' features.

"My dear, you must concentrate on what I'm saying," he remonstrated. "I'll make it simpler. Suppose we each began to breathe in Tempusine of thousand unit strength, as I have rated it. That would mean we—our bodies, our minds, our thoughts, our perceptions, sensations, emotions, bodily functions —would be slowed down to one thousand the normal velocity. Three years would pass and seem to be but a single day. We would age but a day in that time, have experienced but a day's duration, have *lived* but a day."

"Then"—Nancy's hand went to her breast, her eyes wide and startled—

"then you mean we—we shall remain here in suspended animation for five hundred years and—"

Tempus uncrossed his legs jerkily. His voice grew sharper.

"In a sense, yes," he agreed. "Though to us—please listen carefully, Nancy—life will seem completely normal. We will eat, we will sleep, talk, think, feel, move about without any awareness of our condition. At the end of two months—to us—just when the confinement may begin to be irksome, we will open the door, dig our way out—I have the necessary tools—and emerge into the world above as of the year 2460, or thereabouts. Doesn't the thought thrill you, Nancy? Doesn't it stir your blood and set your imagination to racing?"

"No!" Nancy leaped to her feet, and her voice was frightened. "It doesn't. You're mad. You must be! I want to go to Peter. If Peter's dead, I'll die too. I won't stay here. I won't—"

Unsteadily, because of the effect of the sedative, she tried to run toward the steel door. Professor Tempus caught her by the shoulder as her fingers were closing on the locking levers, and threw her aside so that she half fell against the wall.

"You little fool!" he cried. "I'm the sanest man alive in a mad world! And your stupid Peter Benson is dead, I tell you—not only dead, but a mass of rotting corruption by now that even the rats won't touch! Look at those dials!

"We've been breathing Tempusine ever since we entered — a dilute strength to accustom our bodies to its effects. I'll increase it gradually, but already we've been in here fifteen days. Look at the clocks and see. They are marked, successively, for days, weeks, months, years, hundreds and thousands of years. Look only at the first one now."

NANCY stared. The battery of dials across the room were like mocking faces. And what Tempus had said was true. Already the hands of the first, marking the passage of the days, had begun to move. It was perceptibly started on its journey. It stood now at fifteen, and even as she watched, it leaped forward one black space, then, sixty seconds later, another.

"A day each minute!" Professor Tempus told her, regaining his composure. "It's almost three weeks since we left my laboratory. New York by now is only a mass of dead and blackened ruins in which the rats alone still live, crawling from corpse to corpse in the wreckage. You can't go back. Don't you see that? In any case, I don't intend to let you."

"Three weeks?" Nancy Jordan whispered, her lips pale. "We've been in here three weeks? Peter's been dead three weeks? And we—we—"

"We've only grown half an hour older," Tempus told her curtly. "Come, Nancy, stop being hysterical. We are survivors of the wreck of civilization, seeking safety in the future. You and I. Alone. We have only to be composed, and we will be none the worse for the experience. In fact, we'll enjoy it."

He approached her, and she stood slowly upright, her hands pressed flat against the rock wall, as if she would have backed away further. Tempus' voice dropped to a cajoling note again.

"Nancy!" he said. "My dear, don't you see that I love you? I want you to be my wife in the new world to which we are going. This time during which we will be alone together will be our honeymoon.

"Think of it! A honeymoon five hundred years long! Held in each other's arms, our embraces will last for a year. To what other lovers in all history has that ever been granted?"

"No!" The girl's voice was thick with horror. "No, I tell you! I'll kill myself! I'll—"

"You'll do nothing of the kind," Tempus replied. His arm shot out, his finger touched a button set beside the hermetic door. With the gesture a distant, rumbling roar reached them, felt more than heard.

"There!" the tall man said with satisfaction. "I've blown the tunnel in below the laboratory. In a moment I'll seal this door. Then we'll be safe from interruption until we choose to leave our shelter to view the world of the future. We two, alone together—"

He seized her outstretched hand and drew her close to him. When she tried

to struggle free, he pinioned both her arms and held her helpless.

Then he smiled down into her white face.

"Now, Nancy," he said, "I don't mind telling you I was jealous of Peter ever since he first brought you to the laboratory. The idea that you should love a stupid fool like him, when you could love me, was agony to me. But now he's dead and we—"

His words broke off abruptly. There had been no movement of the closed steel door, no sound whatever. But some unseen force at that instant struck Tempus in the face and sent him staggering across the width of the room, to bring up against the far wall, his eyes glaring with murderous rage. The same force caught Nancy Jordan as she swayed and would have fallen. So swiftly that no eye could follow the transition, she was lifted to the bed.

And then, staring upward, she saw the broad-shouldered form that seemed to materialize from nothingness into a wavering blur that stabilized, became solid.

"Peter!" she cried. *"Peter!"*

PETER BENSON, Tempus' laboratory assistant, shook his blond head almost dazedly as he looked down at her.

Then he turned toward Tempus, who was straightening, his lips twisted in a snarl.

"You thought you'd killed me, didn't you?" the younger man asked harshly. "When you put that bullet in my back and left me to die in the store-room. But I didn't die. The bullet didn't go quite where you meant it to. I came awfully close to going under, but the labbratory was only partly destroyed and the flames missed me. And I recovered. Now I'm here. And with several little questions I want to ask you."

"Peter!" Nancy exclaimed. "You're hurt! You're bleeding!"

Benson shook his head, raised a hand to wipe away the blood on his forehead.

"Just a scratch," he told her. "I fell, outside in the tunnel. I only found the entrance this morning. Had to clear away some wreckage to get to it. I was a hundred yards away from the laboratory when an explosion blew it in behind me. The blast knocked me down. I must have been out for several hours. But I'm all right now."

"But I don't understand"—Nancy got to her feet, and taking a handkerchief from his breast pocket, finished staunching the flow of blood from the scratch over his eye—"how you got in. We didn't see you. We didn't hear anything. The door didn't even open. You—you were just *there*."

Without taking his eyes from Tempus, who was lounging now against the opposite wall, beneath the time dials, his hands thrust into his pockets, his smile sardonic, the broad-shouldered young lab assistant put one arm about her waist and held her reassuringly.

"I just came in through the door, in the ordinary way," he answered, his own face perplexed. "It opened when I shoved it, and I closed it behind me. Then I saw the two of you—standing like statues, quite motionless. At first I thought you were dead, or frozen. As a matter of fact, I didn't quite know what to think. Then after a moment, after I lifted you to the bed, you began to move, very slowly at first, then more normally—"

"I think"—Professor Tempus was urbane again—"that I can clear up all that mystifies you both." He removed his hands from his pockets, bringing out a cigarette and patent lighter, tried to light the cigarette. He found to his annoyance that the lighter, though it took fire, burned only for a fraction of an instant and went out again before he could apply the flame to the tobacco. Then he grimaced.

"Of course," he murmured. "I was forgetting that before I lifted the lighter, it had burned for an hour or more. Naturally, the fuel was exhausted before I could get a light. No matter. I was about to explain."

He put the lighter back in his pocket and threw the cigarette away. Then, with his free hand, he unobtrusively nudged the lever behind his back several notches to the right.

"You see, Peter," he went on "—and please don't glare at me like that, it takes my mind off what I'm saying—after I shot you, bungling the job as it turns out, I brought Nancy here where

we would both be safe while we waited for some future, peaceful era to catch up with us. We—"

"Tempusine!" Peter Benson exclaimed. "Of course! You've decelerated!"

Tempus nodded. "Precisely. During the month you were recovering from your wounds back in the laboratory, we were having only forty minutes of peaceful conversation. When you did find this place, thrust open the door and entered, we failed to see you come in, or the door open and shut, because your movements were far too swift, in proportion to our own, for us to observe them. Just as the humming bird's wings in flight are invisible to the naked eye. To you, on the other hand, we moved so slowly that we seemed immobile.

"You struck me"—for a moment an ugly light danced in the narrow green eyes set deep in the pale face of the tall man—"and lifted Nancy to the bed. Then, as you drew in your first breaths, you too came under the influence of the Tempusine with which the atmosphere here is saturated, and decelerated to our tempo. After which your movements became visible to us, and ours to you."

"I see." Peter Benson nodded slowly, and his gaze was still fixed on the scientist. "I can fill in the gaps for myself. I knew you had some secret project in mind. But until you tried to kill me, I didn't realize that it involved Nancy."

He released the girl, and began to advance slowly toward the other man.

"Your scheme," he added, "is a clever one. Ordinarily I'd be highly interested, from a scientific point of view, in seeing it work out. If you'd confined yourself to fleeing alone to whatever future point you've chosen as suitable, I wouldn't interfere. But since you tried to kill me, and kidnap Nancy, I'm going to take a hand.

"Nancy," he called over his shoulder, "see if you can find anything suitable for tying a man up with. I'm going to demonstrate to our respected Professor Tempus that though science has its triumphs, brute force is a useful item occasionally too."

He had crossed half the room when Tempus straightened and withdrew his right hand from his coat pocket.

"Stop there, please," he requested crisply, the automatic in his hand centered on Peter's chest. "This gun still has five bullets in it."

THE younger man stopped.

"I'd forgotten you would still have the gun you shot me with," he said, his voice hoarse. "Well, what now?"

"Nothing," Tempus told him curtly. "The comedy is played out. Time is passing too swiftly for me to waste more of it on you. I mean that literally. Look at the meters above my head."

Peter Benson and Nancy Jordan both raised their gaze to the six clock dials.

The hand of the first, marking the passage of days, was spinning so swiftly that it was an invisible blur. The weeks-indicator was flicking about, completing a circuit almost with every heartbeat. The month hands were moving as swiftly as the second hand of a watch. And even the year indicator was moving, perceptibly jerking from mark to mark on the dial face as they stared.

"Yes," Tempus told them, at Nancy's indrawn breath, "while we were talking, I advanced the Tempusine concentration control. Our deceleration ratio is somewhere high in the thousands. Since you entered this chamber, Peter, seven years have passed in the outer world. Seven years that must have left little of our world. Because of our greater deceleration, we will reach my goal of five hundred years in the future far sooner—speaking from the standpoint of our perception of time passage, of course—than I had originally planned. For that reason I must kill you quickly. You shall not interfere with the pleasures that Nancy and I have planned for ourselves.

"Imagine, Peter! With my bullet in your heart, it will still take you a year to die! Perhaps longer. Let us see—"

And even as he was speaking, Professor Tempus deliberately pulled the trigger.

It was the ineffectual click of the hammer that broke the spell of his words and galvanized Peter Benson

into action. Even as the younger man leaped, Tempus pulled the trigger again. But no explosion followed. He barely had time to whirl, to avoid being knocked down by Peter's rush. He swung the useless gun in an effort to club the blond head, and the automatic struck Benson's shoulder harmlessly, was wrenched from his grasp by the force of the blow.

"The powder!" Peter gasped, grinning with triumph, as he spun around and tried to pinion the dodging scientist in his open arms. "Ten years! While we were talking, ten years of actual time passed. And Tempusine affects only the living, has no effect on anything dead or inanimate, as you know. So the powder in the bullets had ten years to go bad in. Who's the fool now?"

Tempus cursed with unscientific anger as he gave ground. Of course! The explanation was correct. Only life was held in suspension by the retarding effect of Tempusine. On all other matter, time still wrought its havoc.

But he was given no chance to regret his oversight. Peter, younger and stronger, was closing in on him, confidently. Tempus was barely able to keep out of his reach by dodging and shifting. Then, behind him, as he backed from one of Peter's rushes, Tempus felt his laboratory table.

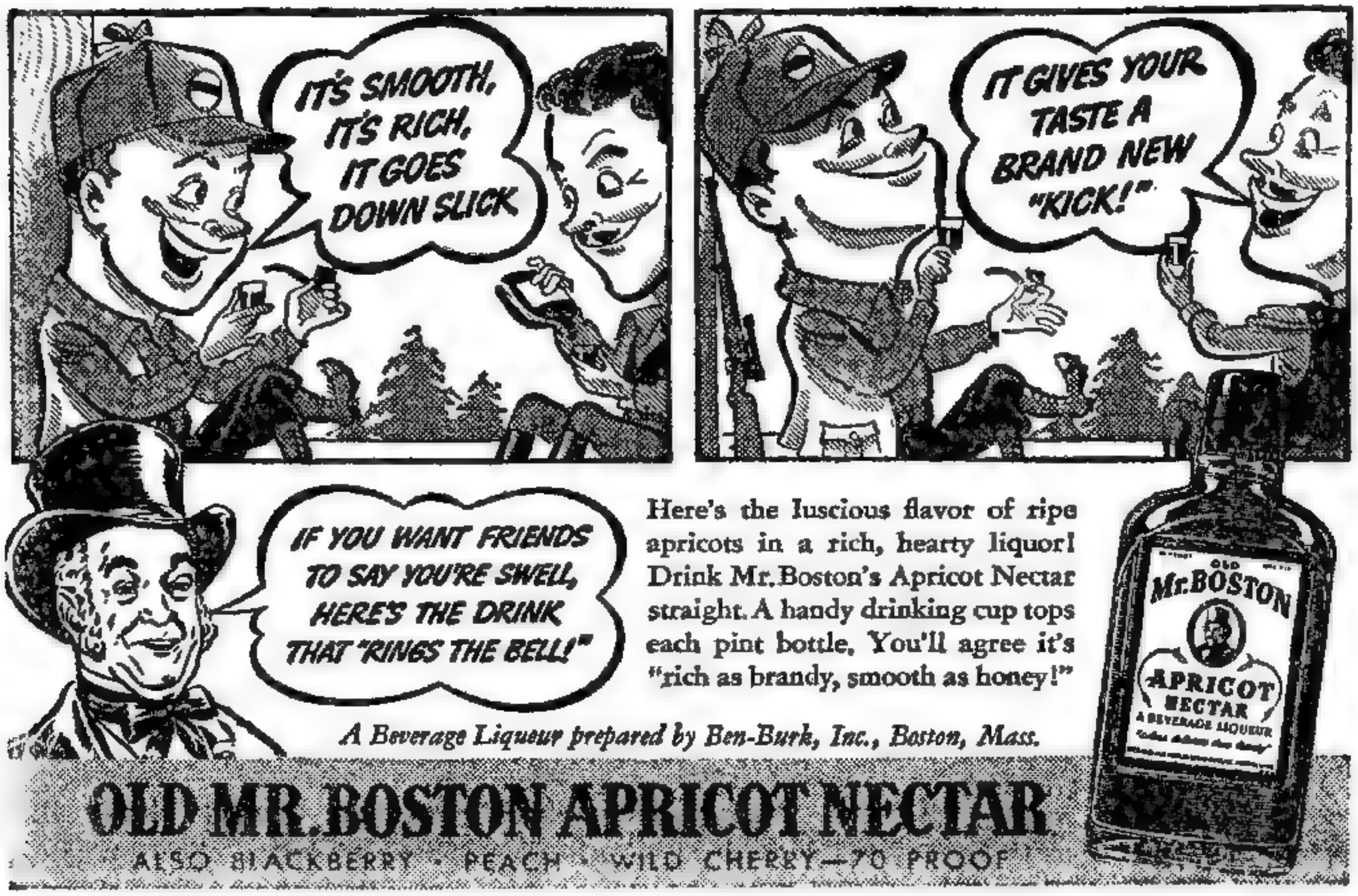
He made a quick snatch and before his opponent was aware of his intention, had in his hand a long, deadly sharp scalpel, both blade and handle of the new stainless steel that was as nearly eternal as a mortal object could be.

Peter lunged, to reach him before he could get the weapon up. Tempus thrust at the table, overturned it with a shattering of glass, and slipped away. Peter dived for him, in a football tackle, and one hand closed on Tempus' ankle.

As he fell, the tall, pale man slashed with the scalpel, but missed. Then he brought up against the wall beneath the time register dials with a force that left him breathless. Peter had not been able to hold him in the fall, and before he could scramble up from his prostrate position on the floor, Tempus

(Continued on page 124)

OLD MR. BOSTON SAYS: "YOU'LL AGREE MY APRICOT NECTAR IS TOPS!"


IT'S SMOOTH, IT'S RICH, IT GOES DOWN SLICK
IT GIVES YOUR TASTE A BRAND NEW "KICK!"
IF YOU WANT FRIENDS TO SAY YOU'RE SWELL, HERE'S THE DRINK THAT "RINGS THE BELL!"
OLD Mr. BOSTON
APRICOT NECTAR
A BEVERAGE LIQUEUR

Here's the luscious flavor of ripe apricots in a rich, hearty liquor! Drink Mr. Boston's Apricot Nectar straight. A handy drinking cup tops each pint bottle. You'll agree it's "rich as brandy, smooth as honey!"

A Beverage Liqueur prepared by Ben-Burk, Inc., Boston, Mass.

OLD MR. BOSTON APRICOT NECTAR

ALSO BLACKBERRY • PEACH • WILD CHERRY—70 PROOF

OVER THE SPACE-WAVES

By STANTON A. COBLENTZ

Author of "Sunward," "The Man from Xenern," etc.

Heard over the Interplanetary Radio, from the Moxos of Jupiter to the Jarvani of Mars:

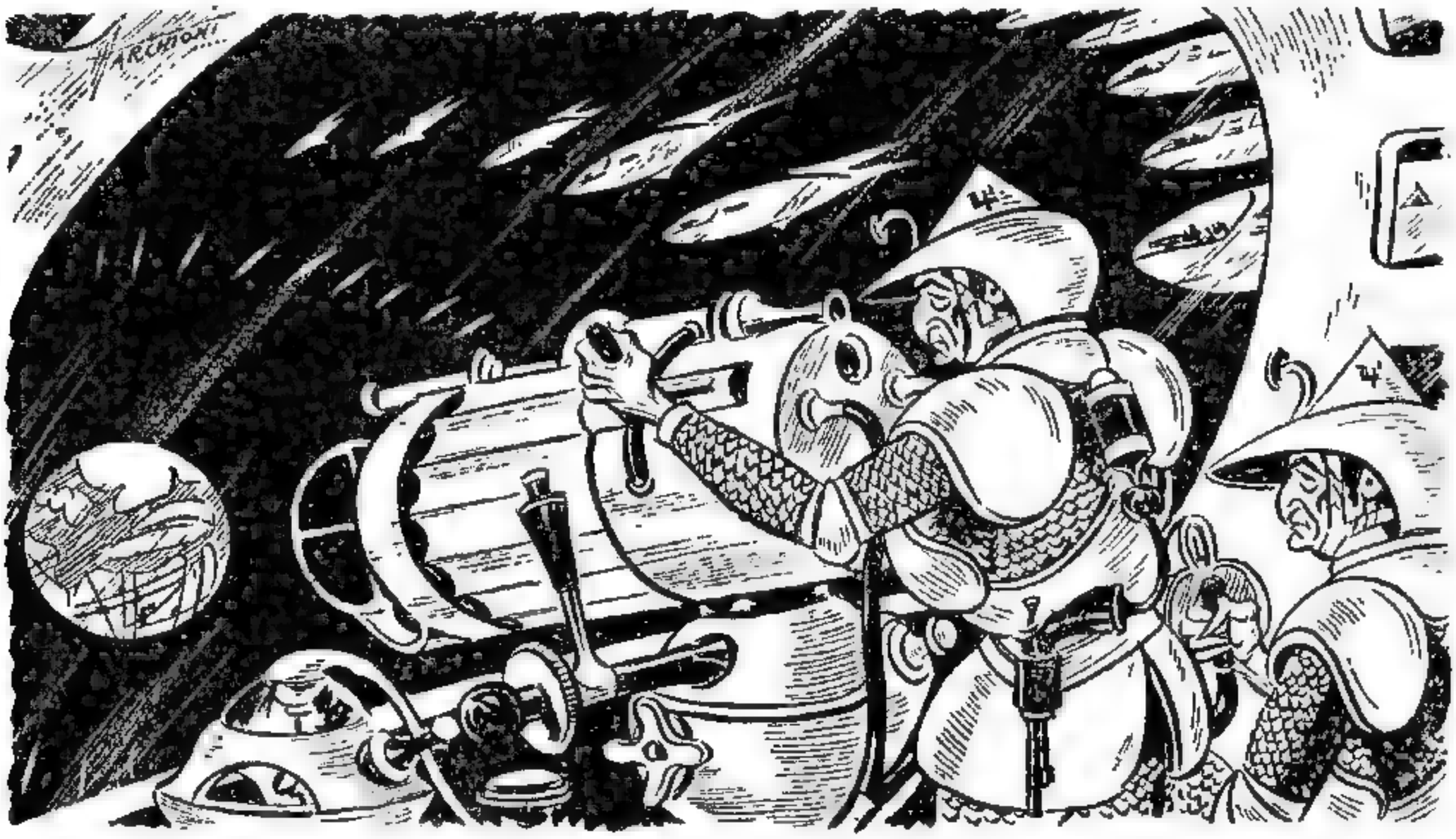
FOR the last time we warn you, people of Mars!

There is no longer a place in the Solar System for smaller worlds. The little planets are the natural vassals of the great ones. We of Jupiter are selected in the divine order of things to be the supreme race of the Universe. It is our privilege and right to rule you of the lesser spheres for your own good. So we advise you—capitulate rather than fight! It will be much better for all in the long run.

Make no mistake about our intentions, people of Mars. The conquest of your little globe is but the first step in our scheme for the domination of the Universe. As soon as your planet has been subjugated, we intend to use it as a space-base from which to hop off to others of the inferior worlds.

There is, for example, your nearest neighbor in the direction of the Sun—that bright evening star with the one moon. By the nature of things, this was intended to be governed by the Moxos. When we have taken it, and leveled down its mountains and made its surviving inhabitants our slaves—we understand that they are but a very stupid order of insect—we will in turn make it a base for conquest.

But now as to you, O Jarvani! Do not doubt our ability to carry out our threats. Our great leader, Lerhitum, who would as soon blot out a city as eat breakfast, has worked out a complete scheme for overwhelming you.



The great Jupiter armada shot toward Mars

The Minor Planets Are Not Always Inferior!

To mention only a few of our modern war inventions: We have Smother Engines, each of which will drain the oxygen from several cubic miles of air, through a process of instantaneous combustion—and so will suffocate all the inhabitants of the area. We have Fire Serpents, which will dissociate wholesale quantities of the silicon dioxide of the sand and rocks, and will reunite the oxygen with certain highly combustible elements amid conflagrations of explosive violence.

We have Liquid Hurridances, which are caused by shooting a poisonous spray with whirlwind velocity through a planet's atmosphere. And we have Electro-Volcanoes, which are caused by the planting of electrical charges so powerful that whole mountains will fly skyward in flaming upheavals that would be catastrophic.

In addition, we have an army of a hundred thousand Moxos waiting to invade your little world. These are the best soldiers in the Solar System. By a special system of training they have been taught never to think except when they are commanded to, never to speak except as they are ordered, never to act by so much as a hair's breadth different from any of their comrades. Such warriors, in our auto-mechanized system, are unbeatable, for each in himself is a perfect machine.

To transport this army and its equipment we have a fleet of ten thousand super-armored space-ships, all in readiness at our sky-ports, prepared to leap off at the time of the approaching conjunction of our two worlds. They will descend at all points of your planet with our famous invincible Meteor Assault.

Within one day, people of Mars, you will be eliminated, if you are foolhardy enough to resist!

We tell you all this so that you may be reasonable and bow to your predestined masters without a struggle. For we are humane and civilized beings and dislike to destroy our enemies even for their own benefit.

We will allow you the length of one of your days to make your decision and flash back your reply. We trust that you will see the light and take the way of good sense, people of Mars!

From the Jarvani of Mars to the Moxos of Jupiter:

HAIL, people of Jupiter!

We of Mars, as you know, are an old and learned race. We have not known the meaning of combat since the infancy of our species, some tens of millions of years ago. But we have given our time to such things as making beautiful poems, singing joyous songs, executing gay dances, fashioning exquisite busts and paintings and studying the nature of things and the meanings of existence. Our science, we will not deny, has developed magnificently. Yet it has not been employed to make weapons of destruction; rather, it has been utilized to increase the pleasure of life and to deepen our knowledge of reality.

Hence we will admit that we are unprepared to resist an invasion. We have had many great leaders, but none who, like your Lerhitum, would find any satisfaction in blotting out cities. Therefore we can hardly believe that you, who also are superbly advanced in science, can mean what you say. We are sure that it is all some tremendous joke which you are playing at our expense. We do not say that you could not invade and overrun our world if you tried; for, as you remark, it is but a minor planet after all, a mere pebble in space compared with your lordly home.

But remember this, people of Jupiter! We of Mars love freedom, and will not surrender it lightly! Rather would we die to the last Jarvani! For the spirit withers and decays when chains are placed about it. We do not ask you to take this as a warning, people of Jupiter. But if you really mean what you say, think long and carefully before you act. Though we Jarvani are not warriors, we will know the meaning of courage if the emergency comes.

From the Moxos of Jupiter to the Jarvani of Mars:

Courage will not shield you against our flesh-gnawing gasses, our bone-dissolving Acid Fire, people of Mars!

Great was our surprise at your answer to our challenge. We had not

known you to be so degenerate as you report. To devote your time to poetry and philosophy when you might be building up your armies! How base and contemptible! This makes it only the more evident how unworthy you are of surviving without our aid. Only the hard, tough-skinned races are meant to endure in this Solar System!

Therefore we see our duty more clearly than ever. And therefore we repeat: Resist, and you will be wiped out of the Universe! Do not suppose, O Jarvani, that this will cause us one quiver of regret. For Lerhitum is not a sentimentalist, and would as soon erase a few hundred million lives as lose any further time over the space-waves. So take thought again! Heed our warning! Your next message must be in two words: We capitulate!

From the Moxos of Jupiter to the Jarvani of Mars:

INSOLENT worms! Already we have waited the length of two of your days and no answer has come to our last message. What does this mean? That you intend to defy us? Can the insect crawling on the ground defy the foot of a giant? Lerhitum is so angry that he grows purple in the face.

Our expeditionary force is now about to be launched. We remind you of this so that you may save yourselves even at the last moment. Surrender while there is still time! For once you have been stamped out, never shall you rise again!

Could you but see the space transports waiting at their docks, you would not hesitate. The iron-shirted warriors in their blue steel mail, with their twisted-cross helmets and flame-shooters that will wither any enemy within miles! The row upon row of modern space-divers, each with their black armor and gleaming red tails, which wriggle with dragon twists. The lightnings and thunders shot out by this great armada, as the inter-atomic engines whir and growl and prepare to propel the ships through the spaceways!

It is a terrible and impressive sight, O men of Mars! And it will be still more terrible and impressive when the fleet comes whirling down from your sky, each vessel bearing Lerhitum's order for your destruction, even unto the last blood-cell of the last Martian!

So, for the final time, we caution you. Make your choice: Surrender, or annihilation!

From the Jarvani of Mars to the Moxos of Jupiter:

WE have received your message, O people of Jupiter, but there is nothing more for us to say. You already have our answer. We know that we are but the inferior inhabitants of a minor globe, but we repeat that we would rather die than live as slaves.

From the Moxos of Jupiter to the Jarvani of Mars:

Your words show that you are indeed but the inferior inhabitants of a minor globe. Evidently you do not appreciate the glory of living as subjects of Lerhitum, who would regulate your lives for your own benefit, and spare you the necessity of thinking or acting for yourselves. Because you do not value that great privilege, you will die. Lerhitum has given the order! Our space-fleets come! One day after they reach your planet, the natives of Mars will be no more!

From the Jarvani of Mars to the Moxos of Jupiter:

ONE last appeal! Take thought, we beg you! It is no light thing to wipe out the people of a planet, with their accomplishments of millions of years. We are but a lesser race, indeed. Our achievements are nothing beside yours, O Moxos. We will go down like weeds before the plow. But what will it avail you to dominate a mere secondary world? O take thought, and be merciful! Be merciful, that your consciences may not be darkened with the greatest crime in the history of the Solar System!

From the Moxos of Jupiter to the Jarvani of Mars:

Mercy is the vice of fools. Con-

science is the obstruction of weaklings. All is justified, so long as it be done in the name of our great leader. Lerhitum has given the command—and so we come, we come! Our next word to you, O men of Mars, will be spoken with blood and lightning!

Excerpt from a spaceogram, radioed from the Jarvani of Mars to the Nedorians of Venus:

YES, our dear friends, at last the peril is over. For a long while, our people trembled with fright; but Lotair, our World President, was confident. We were not as weak as we made ourselves out to be in our messages to the Moxos, whom we put off their guard by making them believe that we had no defenses. True, we had given ourselves for ages to art and literature, and not to making war. Nevertheless, one of our crowning attainments had always been our science. And while we were exchanging compliments with the Moxos, our chemists were busy in their laboratories, day and night, experimenting, planning, inventing. . . .

No doubt, as the men of Jupiter said, we are but an inferior race, who live on the smallest habitable planet in the Solar System, and are no match for the natives of a monster world. But we were not speaking mere words when we proclaimed that we would not live as slaves. Hence, when we saw the first space-transports from Jupiter, all of them soot-black and flaming red and shooting out crimson sparks, we knew what we had to do.

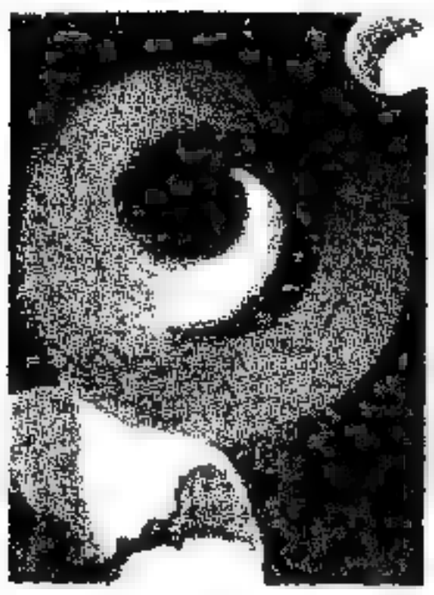
Now it goes against the grain, O Nedorians, to take life. We Jarvani do not like to slay. Lotair, being a civilized man, shed tears at the necessity. But was it not a few Moxos lives against our entire race? And so, when their transports came shooting toward us in long, snakelike curves, we swept them with our emerald searchlight beams.

The results were wonderful to see, O Nedorians. The instant one of the beams touched the invading ship, the vessel withered away, in a spout of steam and smoke. It was as when a moth's wings are singed by a flame.

THE principle was very simple. We had long known how to generate enormously powerful rays from concentrated sunlight, rays capable of producing a temperature of thousands of degrees and of melting almost any known element. These rays we had used in our industrial processes, in manufacturing glass and smelting metals. The idea came to Lotair that these rays could be used for defense—and our scientists at once took up the plan, and built ray projectors for use throughout the planet.

As a result, not one of the Moxos has come down alive. More than two thousand of their transports have been destroyed, and the rest have fled back to Jupiter. We do not fear any future invasion. But we offer thanks that the little worlds will henceforth be safe from Lerhitum and his hordes.

We have shown, we believe, that it is not always the swaggering bully that wins in a war of the worlds. And we have proved that perhaps after all, in the eternal scheme of the Universe, the lesser planets are not inferior.



FEATURED IN THE NEXT ISSUE

THE WATER WORLD

A Complete Book-Length Novel of Liquid Doom

By OSCAR J. FRIEND

SCIENCE Question BOX

AQUATIC LIFE

Editor, SCIENCE QUESTION BOX:

This department seems to be well versed on the various forms of aquatic life. Can you identify for me the electric stargazer and the triggerfish?—W. W., La Plata, Missouri.

The electric stargazer is a small fish which inhabits shallow, sandy bays along the south Atlantic, spending most of its time partly buried in the sand. The mouth is almost vertical and the eyes—located on the top of their flat heads—seem always to be looking upward, which accounts for their common name. If touched on the head, this species can inflict a vigorous electric shock.

One of the lesser-known aquatic fantasies is the triggerfish. On its back is a set of three stout spines which can be lowered to fit into a groove on the back. When it elects to do so, the triggerfish can erect one of these spines, and all efforts are fruitless to lower it until its owner is ready, unless the combination is known. This simply calls for touching one of the smaller three spines. Then the longer one can be easily and conveniently folded down.

An analogy is the safety trigger of a gun. —Ed.

HELIUM

Editor, SCIENCE QUESTION BOX:

Has helium any additional uses besides being employed to keep dirigibles afloat in the air?—S. L., Wichita, Kansas.

Helium has been put to work aloft in the skies, under the seas, and in humanitarian duties on the ground. Helium is used in large quantities by the Army and Navy for the inflation of observation balloons, while the Weather Bureau also employs the gas to lift its meteorological balloons into the air.

The Navy also uses helium in diving operations, and experts declare the raising of the submarine **Squalus** would have been unsuccessful without the gas.

The present-day medical use of helium in the treatment of asthma and other respiratory diseases is an outgrowth of research on the use of helium in diving. The gas is being employed also in the administration of anesthetics, and other promising medical uses are being investigated by scientists. Helium is also being used to some extent in "sky advertising" by large balloons that hold approximately 1,000 cubic feet of the non-inflammable gas and carry advertising on their envelopes or on banners which they support. —Ed.

SUNSPOTS

Editor, SCIENCE QUESTION BOX:

Are the sunspots that appear on the sun scattered uniformly over its surface, or are they confined to one section in particular?—B. C., Chicago, Ill.

Even though the sun is a globe of gas without any solid anchorage, one particular area of its surface has been a favorite place for sunspots for at least 75 years. This conclusion is supported by studies made in the last few years, while the sun was passing through a time of great spottedness, by Dr. Fernando Sanford, professor emeritus of physics at Stanford University.

"Evidently the active region on the sun's surface has persisted for more than 75 years," says Dr. Sanford, though he does not make any suggestion to explain how it could be preserved that way.—Ed.

STUDYING THE STRATOSPHERE

Editor, SCIENCE QUESTION BOX:

How is it that, although the highest point to which a human being ever ascended for observation was slightly over thirteen and one-half miles, scientists are familiar with the conditions that prevail hundreds of miles up? How do they know where the troposphere and stratosphere begin and end? What are they, by the way?—D. V., Monticello, New York.

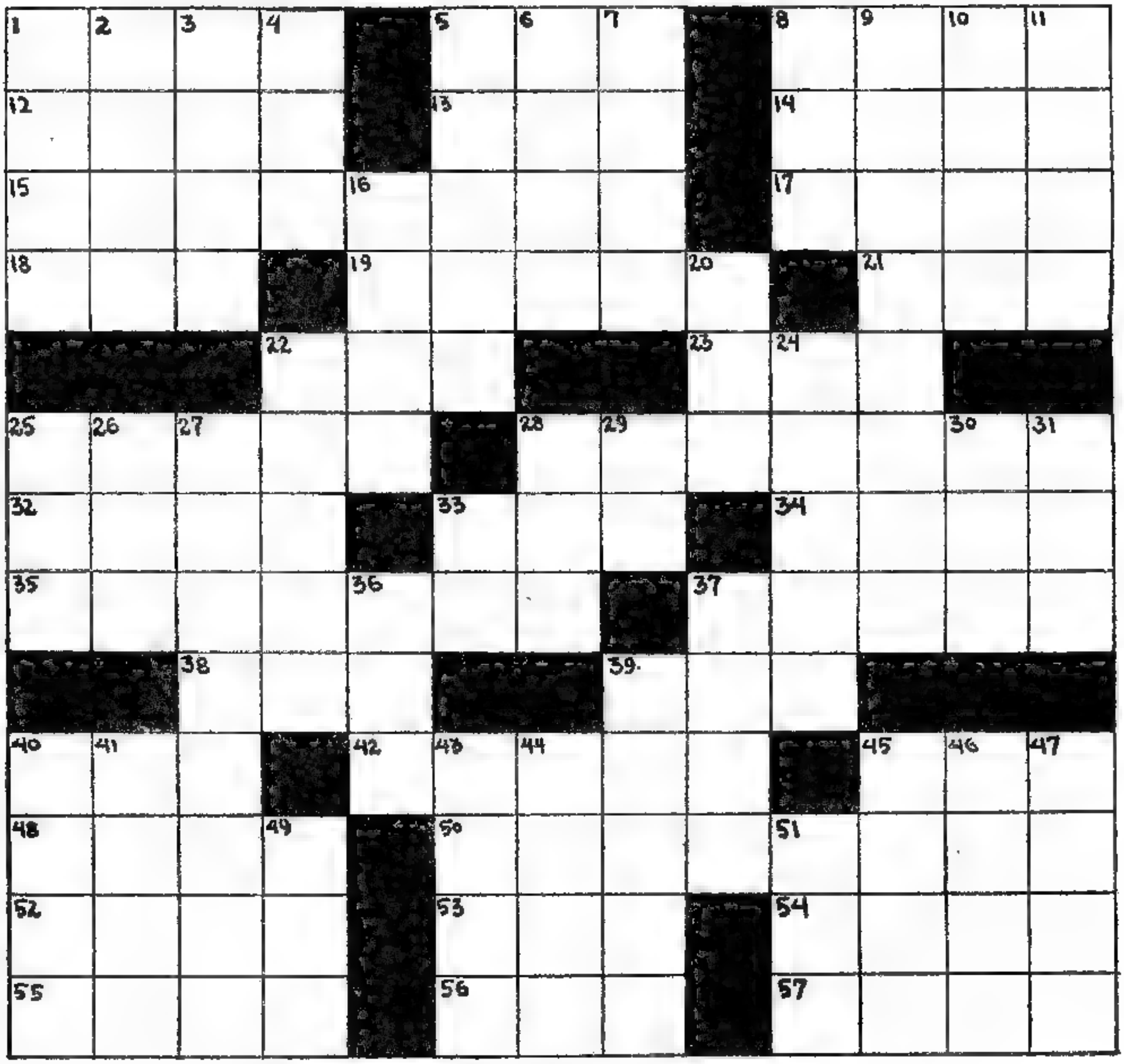
Studies of the atmosphere above seven miles were made by the observation of meteors, by measuring the duration of twilight, and by observing such electrical discharges in the upper air as auroral displays. Each of these methods gave a different result as to the height of the atmosphere, ranging from forty to three hundred miles.

Although we still do not know the exact height of the atmosphere, we know quite definitely that it consists of different layers of air.

The lowest layer of air contains most of the heavy gases. It rises to a height of about eleven miles at the equator, and to about six miles at the poles. This layer is called the troposphere, or the sphere in which there is a constant vertical turning or motion of air.

Beyond the troposphere the outer atmosphere extends anywhere from twenty-five to 275 miles. The second layer of air is called the stratosphere, meaning the horizontal sphere. The stratosphere differs from the troposphere in that no rain clouds can form in it, and the temperature does not decrease with a rise in altitude for many miles. How far this layer extends and the conditions existing beyond it are uncertain.—Ed.

SCIENTIFIC CROSSWORD PUZZLE



HORIZONTAL

1. White earth-like calcium oxide.
5. Period of time.
8. Star which suddenly flares up in the heavens and fades away again to its former magnitude after a few weeks or months.
12. Commonest and most useful of all the elements.
13. Lump of iron pyrites less than an inch in size.
14. Very black.
15. Spontaneous divisions of cells into new cells, especially as a mode of reproduction.
17. Capital of Norway.
18. Snake-like fish.
19. Author of play, "Rocket to the Moon."
21. International Technicians of Neptune (abbr.).
22. Single unit.
23. Assist.
25. Celestial bodies so distant as to appear like luminous points.
28. Digestive ferments of the gastric juice.
32. Fairy or elf in Persian mythology.
33. Constellation in the sign Virgo.
34. To be driven forward on the water by the wind.
35. Bacteria that require free oxygen for the maintenance of their vitality.
37. Organs of respiration.
38. Upward (prefix).
39. Female deer.
40. Secretion from inflamed tissues.
42. Windstorms less violent than hurricanes, but stronger than a stiff breeze.
45. Limb of an animal used for supporting the body and walking.
48. Small social hymenopterous insects.
50. Time of year when the sun is at its greatest declination.
52. Slender rod of ductile metal.
53. Round vessel of earth or metal for culinary and other purposes.
54. The extreme space over which the hand can be expanded.
55. In proofreading, a direction to let stand as originally printed.
56. Mineral spring.
57. Somewhat continuous unstratified metal-bearing vein.

VERTICAL

1. State of an organism in which its organs are capable of performing their functions.
2. Colored circle that surrounds the pupil of the eye.
3. Cryptogamous plant growing on the ground, decaying wood, rocks, etc.
4. In scholastic philosophy, the abstract conception of being.
5. Footless animal.
6. Element of heredity.
7. Point of the compass at which the sun rises at the equinox.
8. Combining form, new, recent, young, used in biology, botany, chemistry, etc.
9. Glassy volcanic rock, usually black.
10. Unit of electromotive force or difference of potential.
11. Soon.
16. Atoms bearing electrical charges.
20. Liquid juice of plants.
22. Constellation noted for its group of three bright stars in a line, and for its nebula visible to the naked eye.
24. A discharge, as of blood.
25. General name for a spring of mineral water.
26. In mining, the point of meeting of two veins lying nearly at right angles to each other without intersecting.
27. Ore-crushing mill with vat and rollers worked by a horizontal beam.
28. Climbing annual herb of the bean family, having primate leaves.
29. Geologic prefix indicating the dawn or beginning of an epoch.
30. Cut off the edges of, as coin.
31. South latitude of Saturn (abbr.).
33. Lithium (abbr.).
36. Wet and spongy ground.
37. Energy expended in overcoming friction, and from which no productive work is obtained.
39. Triangular alluvial deposit at or in the mouth of a river.
40. Feet of animals having nails or claws.
41. Standard quantity with which others of the same kind are compared for purpose of measurement and in terms of which their magnitude is stated.
43. Venomous serpents.
44. Complete vertical circular turn made by an airplane in flight.
45. Combining form, fat.
46. Habitat plant form due to origin by adaptation.
47. Independently inheritable element by the presence of which some particular character in the organism is made possible.
49. Pass from a fluid or unstable to a firm or solid condition.
51. Technocractic Society of London (abbr.).

The Answer is on Page 129—

if You MUST Look!

Read Our Companion Scientifiction Magazines

THRILLING WONDER STORIES

and

CAPTAIN FUTURE

EACH 15c AT ALL STANDS

To People who want to write

but can't get started

Do you have that constant urge to write but the fear that a beginner hasn't a chance? Then listen to what Fulton Oursler, editor of Liberty, has to say on the subject:

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—Edward Foster, Tahlina, Okla.

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Deluge—greedy waves of water blanketing every inch of land. Deluge—and man is driven to the peaks of the highest mountain. And still the tides rise . . . slowly, inexorably . . . until the world is a ball of fluid . . . man's civilization buried in a watery grave!

You've seen deluge stories before, but never have you read so astounding a chronicle of the next deluge and its aftermath as related in Oscar J. Friend's powerful novel, THE WATER WORLD, featured in the next issue of STARTLING STORIES.

Earth intercepts the orbit of a watery nebula. Mountains of water engulf our planet. From pole to pole our world is submerged by the liquid doom.

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Oscar J. Friend depicts this marine world of the future, where land is but a legend, in THE WATER WORLD. It's a strange, inhospitable world, where a savage, towering tide eternally sweeps the globe every twenty-four hours. Where geography is a forgotten science . . . because there is no land to study. Where the only big cities exist miles below the water-line.

You'll want to accompany the hero of THE WATER WORLD as he embarks on a perilous submarine expedition to explore the ruins of sunken New York. You'll thrill to the aquatic perils of humanity's survivors as you watch them eke out food, metals, clothing and luxuries from a world whose seven seas have become all seas.

THE WATER WORLD is the greatest deluge story ever written. And you'll be deluging us with letters of congratulations for Oscar J. Friend after you have read it.

HALL OF FAME

Did you know that the veteran scientifiction author, Dr. David H. Keller, long a popular favorite with fantasy followers, has written a novel recently published by Simon & Schuster, "The Devil and the Doctor"?

The doctor is going places in the literary world, and we're glad. And we're far from surprised, having read many distinctive stories by Dr. Keller in the past.

One of those outstanding stories that helped enhance the reputation of Dr. Keller is THE LITERARY CORKSCREW, a scientifiction masterpiece. Famous fan Julius Schwartz has selected it as his choice for the May issue's HALL OF FAME, and we predict you'll consider the yarn a rare treat. It's Keller at his best. Need we say more?

PRIZE ISSUE

The next issue of STARTLING STORIES is a winner from cover to cover. Short stories by popular authors, plus all our regular exclusive features. More highlights of science and invention in THRILLS IN SCIENCE, and a brand-new mental workout for puzzle fans in the SCIENTIFIC CROSSWORD PUZZLE. It's STARTLING'S star number of the year!

LETTERS FROM READERS

COLLIDING comets and imps of space, but what's happened to you interplanetary buckaroos and rocketeers? Here we are ready to blast off around the System, and the mail compartment is almost as empty as a vacuum. And last issue your old Sergeant Saturn got enough spacegrams and ether-flashes from you space-birds to stuff a hole in space. But this month you space-rats seem to have gone into a hole and pulled it in after you. Nix on light cargoes, lads. We want to see how many gravities this battered space-flivver can pull.

Anyway, scant cargo or not, we're blasting off in a few seconds. Settle back into your hammocks, adjust your acceleration straps, and turn on the oxygen tanks. We'll be roaring out into the stratosphere in a moment . . . so take a deep whiff of O_2. Here we go!

Looks like a pleasant crew this trip. Stop your jabbering, pilots. The old space-dog can't steer this ship when you all talk at the

THE ETHER VIBRATES—with the letters sent in by loyal followers of science fiction. Add your voice! This department is a public forum devoted to your opinions, suggestions and comments — and we're anxious to hear from you. Remember, this is YOUR magazine and is planned to fulfill all your requirements. Let us know which stories and departments you like — and which fail to click with you. A knock's as welcome as a boost—speak right up and we'll print as many of your letters as possible. We cannot undertake to enter into private correspondence. Address THE ETHER VIBRATES, STARTLING STORIES, 10 East 40th St., New York, N. Y.

same time. The first passenger is Rocketeer Bernard Eddings. Cut in your radiophones, lads. This chap has thirteen important things on his mind.

ALL-STAR LINE-UP

By Bernard Eddings

Congratulations on two and one-sixth years of swell stories. You did not publish one very bad story in that whole time. Here is my rating of the stories:

1. "Five Steps to Tomorrow"—one of the best tales I have ever read.
2. "The Black Flame"—the best Weinbaum ever wrote.
3. "The Prisoner of Mars"—Hamilton's best.
4. "The Impossible World"—Binder ranks with the best.
5. "A Yank at Valhalla."
6. "The Fortress of Utopia"—Williamson is my favorite author because his style is different from the usual run of stories.
7. "The Three Planeteers."
8. "The Bridge to Earth."
9. "Giants From Eternity."
10. "The Kid From Mars."
11. "A Million Years to Conquer."
12. "When New York Vanished."
13. "Twice in Time."

Best cover: the one illustrating "The Fortress of Utopia."

Best Hall of Fame Story: "The World Without."

Best short story: "Cosmic Stage." Reprint this in 1945.

Keep up the good work and you will keep the top position you now occupy.—1627 A McClurg St., Charleston, W. Va.

Cosmic centrifuges, lad, but I guess it's true what they say about us: "Read STARTLING STORIES and see the Universe!" Your list of the thirteen top tales is a good one, but why put "Twice in Time" at the bottom, a light-year away from the Number 1 choice? Wellman's novel of Leonardo da Vinci was one of fantasy's humdingers, and you'll have to search into the next galaxy to find another as good. At least, that's the humble impression of this old space-dog. The old space-flivver's mail-compartment still gets flooded with Venusian orchids for Skipper Manly.

Reverse my rockets, but here's Planeteer Harry Jenkins, and he has his ideas about S.S.'s baker's dozen.

THE BAKER'S DOZEN

By Harry Jenkins

There are several reasons for this, my first letter to STARTLING STORIES: (1) To raise my voice in protest against D. B. Thompson, Broox Sledge, and any other who has put "The Black Flame" below any other Startling novel. (2) To give my opinion of the Baker's Dozen. (3) To cuss and discuss the latest issue. (4) and any other thing that comes to my brilliant(?) mind(?).

Edmond Hamilton mystifies me. One month, he is excellent, the next—the skunk slinks off in defeat. "The Man Who Evolved" is still the masterpiece of the old World-Saver. The famous poet who dealt with fantasy, Coleridge, had spells, but **not** smells, as possess Mr. Hamilton and his stories. Coleridge was wise, he quit when he was not in a writing mood, take notice—Mr. Hamilton!

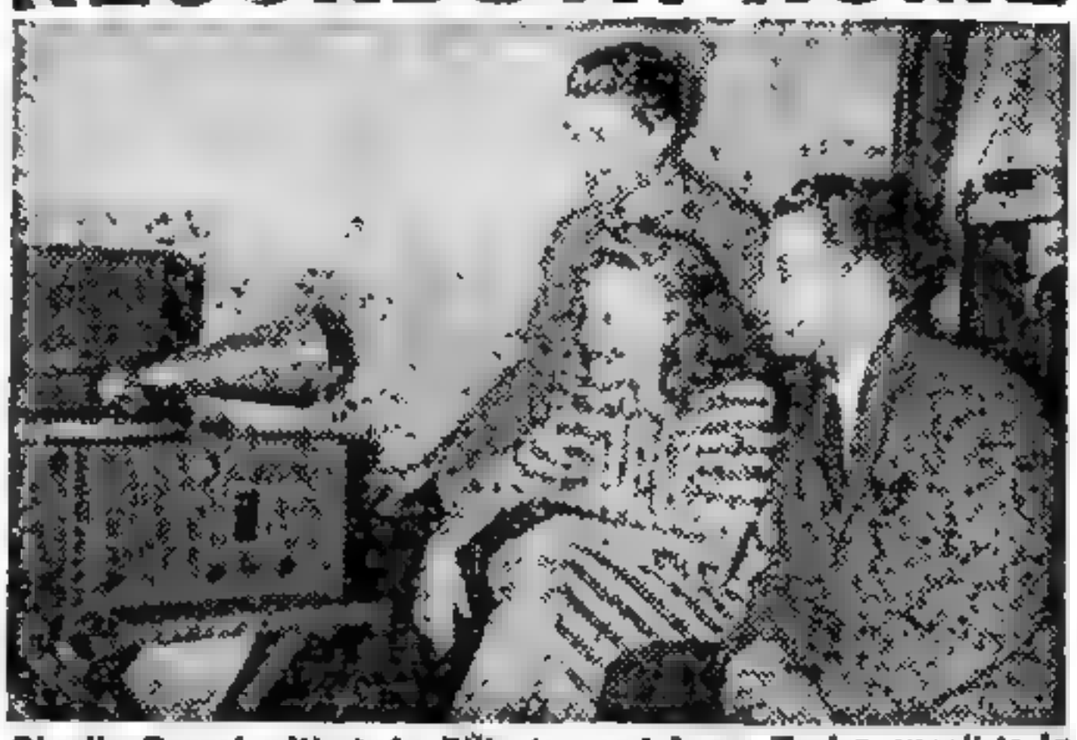
After this build-up comes the comment on "A Yank at Valhalla." A masterful handling of the old Norse legends was accomplished. This excellent story keeps up the standard of STARTLING STORIES. One of Hamilton's best.

Let me with much timidity, unlike other readers' temerity, whisper the Baker's Dozen:

1. "The Black Flame"—Any description of this story would seem superficial. The human characters of the immortal Wein-

[Turn page]

MAKE YOUR OWN RECORDS AT HOME



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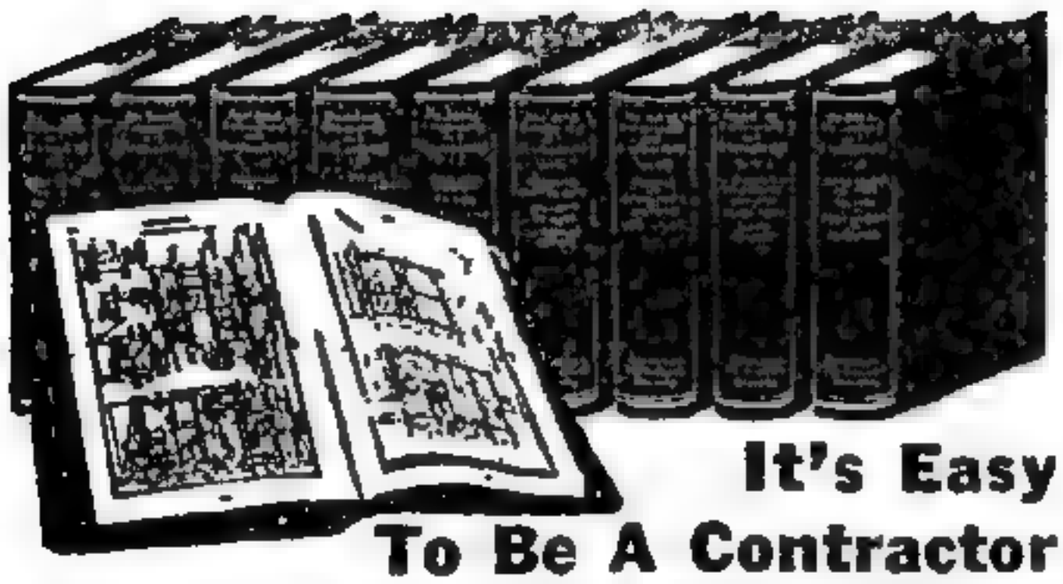

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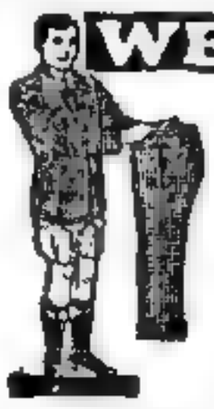

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baum will never escape my memory. This story set an incomparable precedent for S S.

2. "Twice In Time"—Despite the apparent ending, Wellman's novel is a masterpiece of time-travel-tales
3. "The Prisoner of Mars"—What's Hamilton doing here?
4. "Giants From Eternity"—An excellent yarn, though I thought Wellman chose some wrong "Giants!" Plot— a-h-h-h!
5. "Five Steps to Tomorrow"—The steal on Dumas was very well worked by Binder. The ingenious means of revenge left me speechless.
6. "Fortress of Utopia"—A bad Williamson is still good.
7. "The Impossible World"—Binder, need I say more?
8. "The Bridge to Earth"—An old plot with William's pleasing style.
9. "A Yank at Valhalla"—No comment.
10. "When New York Vanished"—Didn't know Kuttner had it in 'im.
11. "A Million Years to Conquer"—Typical Kuttner.
12. "The Three Planeteers"—Deserves first place, if you like adventure yarns.
13. "A Kid From Mars"—For some strange reason, this is the only novel that didn't click with me. Why, Friend?

If "Sojarr of Titan" is half as good as I expect it to be, don't be disturbed by any wild noises. That'll be me!—2409 Santee Ave., Columbia, S. C.

A wise selection, Rocketeer Jenkins. You're welcome to help steer this space-crate any day. You travel our velocity, lad. But why in Saturn's Rings did "The Kid From Mars" fail to click with you? Left you as cold as space, eh? It just goes to show you what too much solar space-hopping can do to a guy. We read the yarn and it had us laughing from Mars to Pluto. Friend's humor has been known to prove a sure cure for victims of suspended animation. Well, it looks as if he suspended your cyclotrons or something when you came aboard. But stick around for the ride. Oscar's coming back next issue, with a novel that's the best thing ever seen in three dimensions.

Ed Hamilton's our favorite space veteran, even if he has saved more worlds than you could count. After you've knocked around as much as we have you'll agree that a lot of them need saving. By the way, have you taken a cruise on Hamilton's CAPTAIN FUTURE orbit? Captain Future—there's a ray-slinging maverick who can outguess, outfight, and outdazzle any being in the System. How does he do it? It's a system!

And here's a space-gun salute from Space Veteran Arthur J. Burks fired in Ed Hamilton's honor. Burks has made this trip plenty of times before, back in the days when this space-dog was only a corporal and our ship had a coat of paint. He's spun some mighty fine fantasy yarns himself, Burks has, and when he pats a brother author on the back of his space-suit, you can bet a sun against a meteor that the tribute means something.

But Arthur can tell you more about that in his own words.

VIVA VALHALLA!

By Arthur J. Burks

I picked up STARTLING STORIES to see what's running, as any scribbler should do when he's planning to write for a magazine, and noted "Yank at Valhalla," by Edmond Hamilton. Such a lot of story! I settled down to read it as a duty, and found myself reading it as a fan, and with unusual interest.

I've been intrigued often by tales of the old gods, and once even tried my own hand at one, though with indifferent success—though it sold—but have never been able to make them sound like anything interesting or entertaining. Nor have I seen any by any other writer who made 'em interesting—except this here Hamilton fella.

His characterization of Thor made me thirsty, so thirsty I felt like telephoning the old boy and inviting him to the Metropole for a few slugs of mead. What a fella to go on a bender with! I could hear him hammering on the counter for attention, and getting it without an argument. Hamilton made 'em all live—even the wolf and the snake, though I had no yen to fraternize with either of 'em.

I trust that by the above I make it clear that I thought "Yank at Valhalla" an unusually good story—an unusually good **pseudo-scientific** story.

Nice going, Arthur, and thanks for the kind words. We want to be looking through the visi-glass of the port one of these days and seeing one of *your* novels ahead.

Which brings us on to the next passenger, who pops up with a query and tells us his question can't be answered. Spinning Saturn, Rookie O'Neil, but are you asking us or telling us?

FANTASY FLAW

By Nate O'Neil

I have just finished reading the novel in the November issue, "When New York Vanished." The novel is as good as others, readers will tell you. Although I realize it is a story and that anything can happen in fiction, one thing bothers me—the atomic power shield, created to protect the Earth from a plague from the ether. According to the story, the Earth Shield would not allow anything to penetrate it except solar radiation.

If this is so, what would happen to space travel? The world has waited many years to find the means to travel in space. Now that it has been found (in the story only, of course) do you think that an American superscientist would sit back, with a space ship in his garage, and have no curiosity, personal or scientific, about space and the Solar System? Of course not, but how could he get away from the Earth? It would be foolhardy to open the screen since it would be so dangerous and difficult, especially when the Earth may be in the center of a "cosmic cloud of energy."

I don't expect an answer to my question, since there is none. But it is a question to think about and a story that sets you thinking is a good story.—109 Kenyon Street, Hartford, Connecticut.

Peel me a strip of Heaviside Layer, lad, but Hank Kuttner forgot to delve into the intricacies of the Earth Shield. We'll have to drop him out of the torpedo-hatch unless he can alibi himself by the time we reach Jovopolis port. In the meanwhile, we'll have to keep that space ship in the garage.

At any rate, we've something to be thankful for. Kuttner's yarn has given us a space ship in every garage. Now if we could only get a Venusian blonde in every space ship. . . .

And here's a bit of ballast from Kiwi Jerry Datlow. They say you can't hear sound in space, but this bird's jets are roaring. Listen in:

HAMILTON'S CLASSIC

By Jerry Datlow

Congratulations! Have just finished reading that masterpiece, "A Yank at Valhalla," and I am positively speechless. I started reading S.S. about a year ago with "Five

[*Turn page*]

Getting Up Nights Makes Many Feel Old

Do you feel older than you are or suffer from Getting Up Nights, Backache, Nervousness, Leg Pains, Dizziness, Swollen Ankles, Rheumatic Pains, Burning, scanty or frequent passages? If so remember that your Kidneys are vital to your health and that these symptoms may be due to non-organic and non-systemic Kidney and Bladder troubles—in such cases CYSTEX (a physician's prescription) usually gives prompt and joyous relief by helping the Kidneys flush out poisonous excess acids and wastes. You have everything to gain and nothing to lose in trying Cystex. An iron-clad guarantee wrapped around each package assures a refund of your money on return of empty package unless fully satisfied. Don't take chances on any Kidney medicine that is not guaranteed. Don't delay. Get Cystex (Siss tex) from your druggist today. Only 35c. The guarantee protects you.

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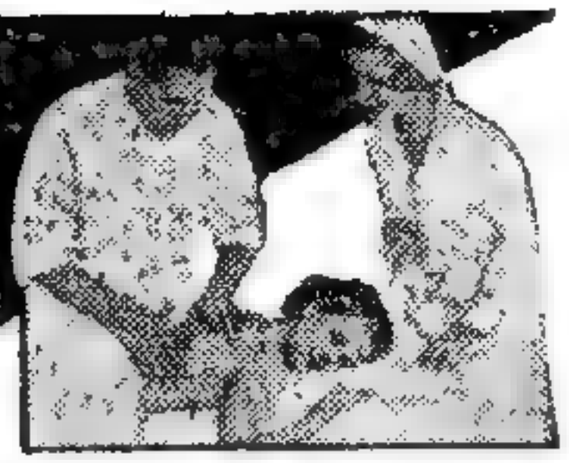

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Steps to Tomorrow," which I thought was very good. I missed the next few issues until "The Kid From Mars" came along. That yarn was a flop, I'm sorry to say.

Then the mag picked up with "A Million Years to Conquer." At the time I thought it the best long novel I had read for a long time. Imagine my surprise when I completed the superb fantasy, "A Yank at Valhalla." By the last quarter of that story I was chewing my fingers and at the end I almost cried. I can't say much about the supporting shorts. And I can't see why "City of Singing Flame" rated "Hall of Fame."

Here's to more stories like "A Yank at Valhalla" plus a monthly issue of S.S.

This is my first letter to any science fiction mag.

Cool your jets, son, but we've all got different tastes. That's why some like Mercury's Hot-Side and others the Cold-Side. But you call a meteor a meteor, and that's what we like.

And now that you've joined the crew, let's hear from you again. The old sarge's radiophones are shock-proof, so fire away. We like it Hot-Side.

Shooting stars, but here's a rocketeer whose ray-pistol is spelling out an S.O.S. Let's see if we can help him.

BACK-NUMBERS WANTED

By Sam Basham, Jr.

I have been reading STARTLING STORIES since Kuttner's story, "When New York Vanished." I liked the recent "Kid From Mars" very much. I have been reading science fiction for several years and feel your magazine is bringing "science fiction back," so to speak. The short story in the last issue was not up to par, as it takes a novel to develop a story to the fullest point and you are filling this need by having a complete novel in every issue.

In closing, I appeal to anyone who has "The Black Flame," "The Impossible World," "Giants From Eternity," "The Bridge to Earth," "The Fortress of Utopia" and "The Three Planeteers" please to write me and tell me how I may obtain them as I am collecting science fiction and I missed those issues. —Bardwell, Kentucky.

Well, you space-rovers, put on your helmets and start searching the spaceways for Basham's back-numbers. Scan your spacedomes from cellar to attic and let Sam know whether you can supply him with any of the novels he requests. Otherwise he'll have to go to the Hermit of Mars for his copies, and you know how that old geezer hoards his issues!

The mail-sack's getting empty, and port's ahead, so we'll have to hurry. What in all combustion is this?

FIRST FLIGHT

By Lee O'Connell

As you can see, this is my first letter to any s-f mag. I am also a "youngest reader," having read my first science fiction at the age of eight. The scientifrenzy then got me, and I've been reading fantasy literature ever since. I am now 13 years old.

STARTLING STORIES is undoubtedly the best magazine of its type, as your November issue proved. Your novels are really **novels**, and not novelets. Your stories have an equal mixture of adventure and science.

"A Million Years to Conquer" was one of the best stories ever featured in your magazine. It obviously calls for a sequel, telling of Ardath's future exploits. The idea of selecting "mentally superior" people from different ages is novel and original. As for the "Island in the Marsh," it was no good except for that interesting character, Hart Crozier. This tale is a detective story coated with science.

"The Man Who Evolved" must have been the basis for all "evolution" plots. It was really an interesting Hall of Fame story, though.

As for the features, enlarge THRILLS IN SCIENCE and "Review of Science Fiction Fan Publications." Culminate SCIENCE QUESTION BOX and SCIENTIFIC CROSSWORD PUZZLE. More of Bergey on the cover.

Well, I'll be looking for my letter in your corner. So long until next time—5058 Ternes, Dearborn, Michigan.

So this is your first take-off into print? Well, you couldn't have asked for better company than the old sarge's gang of space-rats . . . they're the pilots that steer the good ship S.S. through the ether-lanes.

The going is hazardous—but it's fun. Sure, we may crack up in a meteor swarm, or get thrown back a few zones in space when we hit a warp or two. But on the other hand the acceleration is fast and furious, and we've lots to show you, from the Loonies on the Moon to the marsh-tigers of Venus.

So welcome to the planet patrol, Pilot O'Connell. And that invitation is extended to all the rest of you armchair astro-navigators. The next solar jaunt starts in sixty days. Hop aboard. Your passport? Merely the next issue of STARTLING STORIES.

Time and space dwindle—or contract, as Lorentz-Fitzgerald would say—and the tele-radio signals planet-port ahead. The cargo's been light this trip . . . guess that's why the journey has been so fast. But I've enjoyed chewing the synthesilk with you space-mugs, and I hope you've liked the rambling gab. We'll be chatting again next journey. So intersect our orbit, will you? Flash me your spacegrams via etherline, interplanetary wireless, or terrestrial cablegram. But get 'em in the mail-hatch faster'n light, eh lads? I'll be keeping my radiophones ready for contact all the while.

—SERGEANT SATURN,
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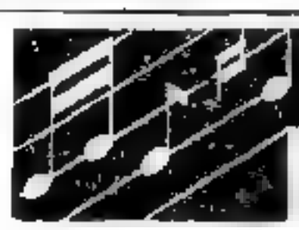

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THE ETERNAL MOMENT

(Continued from page 110)

had staggered to his feet and slipped away again, sharply aware that in his fall his shoulder had struck something more than the wall.

One swift glance told him the truth. The control lever! His shoulder had brushed against the lever that controlled the release of the Tempusine compressed in a stainless steel tank in the wall. It had been thrown over to its furthest point, far beyond any limit to which Tempus had ever dreamed of opening it.

Tempus hesitated, as if to spring back to the lever, to thrust it shut, and the moment's indecision was fatal. Peter rushed and had him by the throat before he could recover himself to meet the attack, and together they crashed to the stone floor.

They fell side by side, Peter's hands locked about Tempus' throat, his face grinning savagely inches away from the professor's long, pale countenance. Tempus could feel the fingers that clutched him contracting, closing about his windpipe, even as he desperately raised his hand to plunge the scalpel blade into his adversary's back.

AND in that frozen instant, with a part of his brain queerly disengaged, Tempus saw other things. He saw Nancy Jordan crouching against the wall just beyond them, her hands to her face, her eyes wide with hope and fear. In the split particle of an instant in which he stared, he saw her clothing fray, rot, vanish from her into nothingness. He saw that the same thing had happened to himself and to Benson, so that they lay struggling like primeval, naked savages.

His eyes flicked to the time register dials on the far wall. For the space of four or five heartbeats he could see the indicator that registered the passing years in thousands crawling around. Then, in another instant, the clocks were gone from his view, fallen from the wall as their supporting bolts gave way to time's relentless march.

That much Professor Tempus saw all in an instant as he was raising the sharp scalpel high. And realization flashed through his brain. Their life deceleration ratio must be high in the millions now! While they were drawing a

single breath, how many years had rolled by in the world outside? He could not even guess. His wildest calculations had never taken account of such a possibility.

But he had no further time for thought. The deadly fingers were tightening on his throat inexorably, and he must strike now or die. His outstretched arm, with the sharp knife clutched in his fingers, began to descend.

Peter Benson could feel the blow coming, though he could not see it. If it landed fair, it would kill him. The scalpel blade would penetrate to his heart. But if he could dodge it, or prevent it from reaching any vital spot, he had Tempus. The man's strength was ebbing beneath his fingers. Peter Benson could feel it going. He could hunch his shoulder, throw the shoulder blade around to receive the descending scalpel, escape with nothing worse than a bad slash.

His brain began to flash the signal for the movement to his muscles. . . .

* * * * *

An excerpt from the guide book of the World Museum of Ancient Arts and Sciences, National Culture Center. Issued by the Director. Price to the public, 1 prodo-unit:

"Most noteworthy, perhaps, of any exhibit the museum has to offer is the group of three North American savages, known as the Firth group, after Educator Firth-7, who unearthed it eighty years ago in the course of excavations for the new museum building.

"In the seven decades this group has been on display, exactly as discovered, it has proved the most popular and instructive item relating to the past of our race which has ever been unearthed.

"It is estimated that seven thousand visitors a day view the group, and the Distinguished Visitor's Book has been signed by every scientist, educator, and Regional Supervisor of note in the world. During any of the quarterly Triday Festa celebrations, eighty thousand visitors may tax the Museum's capacity to the utmost in their eagerness to examine this famous item of our collection.

"The group is reached by elevator

[*Turn page*]

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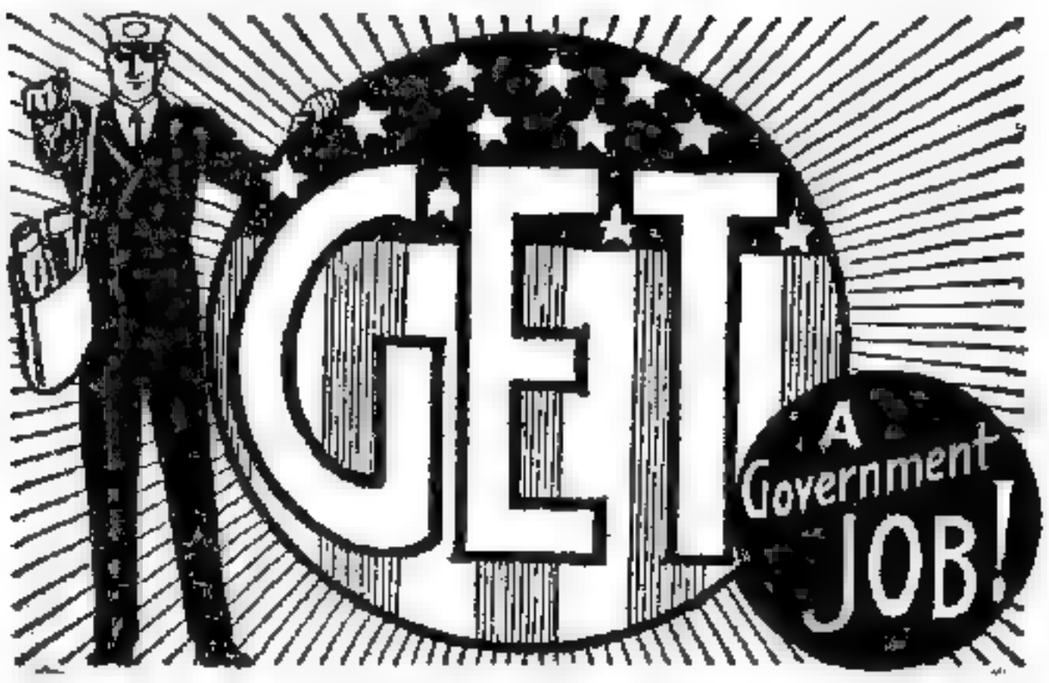

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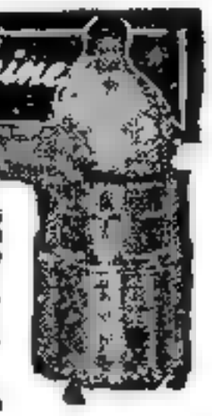

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from the basement of the museum. It lies at a depth of one hundred and eighty-seven feet beneath the surface of the subsoil rock, and apparently was placed there for security from chance discovery. A river is believed to have once flowed over the spot.

"The three savages will be found in a room carved from the solid rock, made air-tight by some ancient process, and closed by a door of eternal metal. This door was found when workmen broke through into a natural passage leading to it, and summoned Educator Firth-7, then director of the Museum.

"Taking all precautions against noxious gases that might linger within, members of the Museum staff entered and found what the public may observe today through the three large crystal windows that have been installed in the walls of the chamber.

"Attention first centers upon the two men engaged in a death struggle upon the floor. Lying side by side, one has his fingers locked about the other's throat. The second is just bringing down a gleaming knife of eternal metal, which may presently pierce the first man's back in the region of the heart.

"Beyond the struggling pair crouches a woman, her face contorted with fear and anxiety, her eyes wide, her muscles taut. She is the prize for which they are thus fighting to the death, and all her feelings are mirrored in her face. Which will win? The older, more intelligent appearing man with the knife, or the younger intruder who is seeking to wrest her from him? She does not know, nor do we. But we can share the emotion with which she awaits the outcome.

"As for the two contestants, their chances are equal. One will live, one die. Which, no man can guess. Their faces are twisted with rage and hate, their muscles tense with striving, and frozen thus into immobility, they have survived the ages since the master embalmer who arranged them vanished.

"The public will note the typical physique of the long distant past which marks all three. The small stature, the rounded skulls, the excessive hairiness of both males and female will be immediately apparent. X-ray tests, however, have shown that no changes have taken place in the internal organs, consequently no dissection has

ever been attempted.

"There is a mystery about these three—a haunting mystery which has been much written of, and which has made several of our most prominent scientists declare that these men and this woman are not, in fact *cannot* be, dead.

"They base this claim upon the fact that no process of preservation has ever been known which could so perfectly retain every similitude of life as is evident here. And indeed, there is much matter for speculation. Microscopic slides of blood and skin have been made and studied. When first examined, they present every appearance of life—and shortly after, obvious death takes place in them.

"This gives rise to the certainty that the strange gas present in the air-tight chamber is the secret of the preservation.

Samples of this gas have been taken, but have defied analysis, and to date no researcher has succeeded in preserving dead specimens in it.

"Are these three alive? We cannot be sure. The most delicate instruments at our command have shown no signs of motion.

"Speculate if you will upon the winner of this eternal struggle. Watch intently for knife to move or strangling fingers to tighten. Return year after year, as some visitors have, hoping to detect some sign that the knife of the one is a millimeter closer to his enemy's heart, or the fingers of the other closed an iota tighter upon his adversary's windpipe. Look for the wink of an eye, watch for the twitch of a muscle. We do not think you will be rewarded, though you watch for another thousand years—as is theoretically possible, for, since in every way the chamber has been kept exactly as found, there is no reason the figures should alter in the least in the next millennium.

"It is free to every man to look, and marvel at this frozen drama of life and death so dramatically recorded and left for us by some unknown genius, to picture for us the savage life of mankind in an era long since vanished.

"Look! And as you look, wonder what the silent, immobile participants in the struggle are thinking, and whether either of them will ever gain the victory!"

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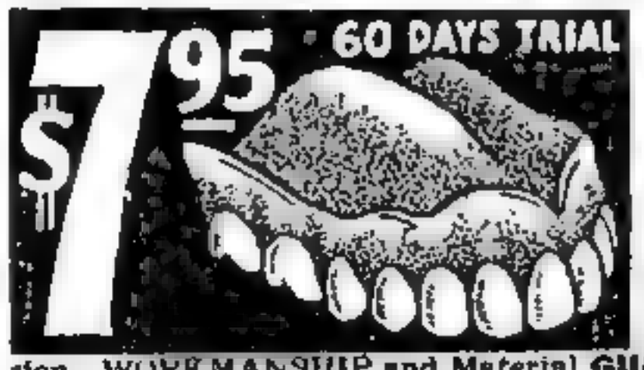

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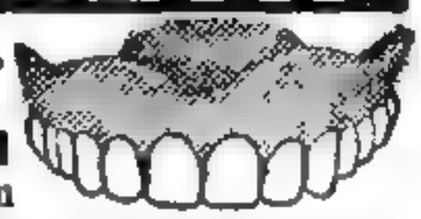

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REVIEW OF THE SCIENCE FICTION FAN PUBLICATIONS

SPACEWAYS. 303 Bryan Place, Hagerstown, Maryland. Edited by Harry Warner, Jr.; James S. Avery; Walter E. Marconette.

Big second anniversary issue here, with gala turnout of contribs from scientifiction's notables. Short stories are authored by August W. Derleth and Lester del Rey. Feature articles on various fantasy sidelights are by Seabury Quinn, Mort Weisinger, Frederic Arnold Kummer, Jr., Julius Schwartz, John W. Campbell, Jr., Amelia Reynolds Long and others. Fantasy poetry by H. P. Lovecraft and Eric Frank Russell.

This 42-page issue is crammed with fandom material that should appeal to all the lads and lassies. A four-star number.

• • •

PLUTO. Published by the Literature, Science and Hobbies Club of Decker, Indiana. Edited by Marvis Manning, Vincent Manning, Maurice Paul, Joe Gilbert, and others.

On the lighter side. Bright presentation of fantasy topics and foolery. Illustrations well done, lending a gay note to mag's tempo. Satire, quizzes, departments, with bulletin's keynote informality. Deserves a once-over if you haven't investigated as yet.

• • •

THE COMET. 1140 Bush Avenue, Martinez, California. Edited by Tom Wright, Jim Tillman.

Neat make-up, profuse illustrations, and a couple of standout articles and features. Cartoons, also, plus other science-fictional hors d'oeuvres. Best contribs are by James Tillman and Harry Warner, Jr.

• • •

FRONTIER. 3031 North 36th Street, Milwaukee, Wisconsin. Edited by Donn Brazier, Betty Deppiesse.

A hekto'ed gazette, with worthwhile fan fact, features and fiction. An interesting quiz anent H. P. Lovecraft, for admirers of the great scribe, included in issue. "The Man Who Moved Up," a short yarn by D. B. Thompson, not bad.

• • •

FANTASCIENCE DIGEST. 333 E. Belgrade Street, Philadelphia, Penna. Edited by Robert A. Madle, Jack Agnew, Fred W. Fischer.

Julius Unger's reminiscent article, "An Old-Timer Returns," is an authoritative piece on yesterday's fan movement as compared to today's. Robert W. Lowndes, with his "Ten Years Ago in Science Fiction," turns back the calendar for a decade and discusses the stories of that period. It's fun comparing the types of fantasy used at that time with the yarns today.

Fiction, readers' letters, and departments. An okay job.

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More Worlds to Conquer

By MANLY WADE WELLMAN

Author of "Sojarr of Titan" and Many Other Scientifiction Novels and Stories

THIS story-behind-the-story is one of the most basic in science fiction—the recognition of new frontiers for the future. No explorer or adventurer need feel smug or surfeited as long as space has not been crossed; and, as my first chapter rehearses, the jump to Saturn will be (after, perhaps, the first space-flight to the Moon) the most important and difficult in interplanetary history.

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What rich experiences are in store for those who make such flights! I, for one, am confident that the first attempted flight across space will take place in this century, and that many of us will live to see it—perhaps one or two who read this will share in it. Pray heaven you are successful.

About Sojarr, my protagonist, I will say no more than that the qualities which make a ruler of him are those which make all men rulers. The best of us will stand, one day, on the roasting plains of Mercury, in the dark deserts of Pluto, commanding and flourishing there, and our chief wish will be for more worlds to conquer.

Solution of Crossword Puzzle

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29x5.25-19	2.45	1.15
30x5.25-20	2.50	1.15
31x5.25-21	2.80	1.15
5.50-17	2.75	1.15
28x5.50-18	2.75	1.15
29x5.50-19	2.75	1.15
6.00-16	3.15	1.45
6.00-17	2.95	1.15
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